TECHNIQUES: GRAPHICS FOR MULTIPLE OUTPUT

PC GRAPHICS & VIDEO

JANUARY 1998

REVIEWS

- FujiFilm DS-300 Digital Camera
- Hewlett-Packard Kayak
- Videonics Video Toolkit 3.0

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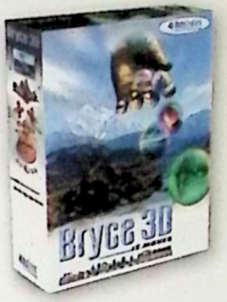
Set Your World in Motion



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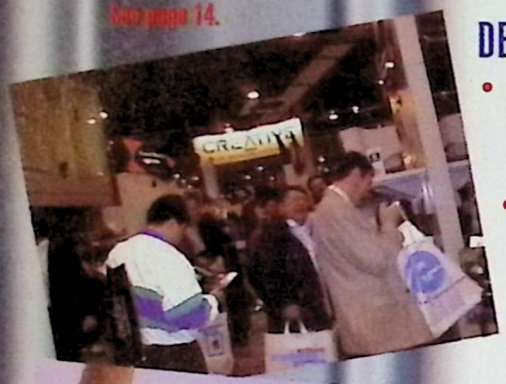
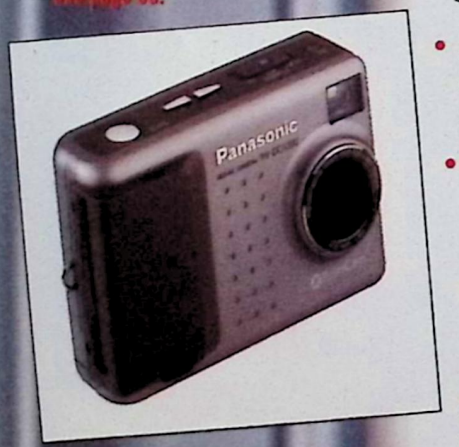
Find out what the buzz was on the COMDEX show floor in "Newsline." See page 14.



Techniques for creating art for multiple uses at a variety of resolutions. See page 30.



The credit-card sized digital still camera, the PV-DC1080 joins the Panasonic "PalmCam" family. See "In Focus" on page 56.

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Cover: This issue's cover was designed by Eyo Sama using a combination of Kinetix' 3D Studio MAX, Animatek's World Builder, Adobe's Photoshop, and Fractal Design's Poser on a Pentium Pro 200MHz machine with 128MB RAM. Some of the computer component models are courtesy of the 3D Café and Platinum Pictures.

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PC GRAPHICS & VIDEO

EDITORIAL

There's Always Next Year . . .

Sadly, we in the computer graphics business have come to accept conditions that lead to this list of goals.

For me, New Year's resolutions usually lead to pathetic rationalizations after failed attempts to honor them. But I still make them, recognizing like many people that New Year's resolutions have the potential to bring about healthy change. Of course, it's even easier to make New Year's resolutions for others. That's why I have no problem offering the following suggestions to computer graphics companies entering the new year.

1. Make sure your drivers work the first time. Don't issue a hastily constructed driver with plans to update it on your Website six months after the product has been crashing, conflicting with, and generally fouling up thousands of people's computers.

2. Represent your product accurately. Don't skew ViewPerf numbers to make it look as if your graphics card is far more capable than it really is.

3. Make all upgrades real. Stop issuing upgraded versions of products for the same price as the original if they do not significantly enhance the user's toolbox.

4. Give us good manuals! Fully explain the product and its features. Include tutorials.

5. Keep your Website up-to-date. (It's pretty obvious why.)

6. Accept responsibility. Don't automatically blame other products—or the operating system—when a user calls technical support with a problem.

7. Document bundled software better. It's hard to get much use out of something when it comes with no manual and asks for a registration number that is on the first page of the manual you don't have.

8. Make sure you double the time that seems necessary to bring a new product to market before publicly announcing the shipping date.

Sadly, we in the computer graphics business have come to accept conditions that lead to this list of goals.

But those manufacturers that consistently deliver good drivers, good tech support, and products that do what they're supposed to do (and come out when they're expected) develop reputations that build customer loyalty.

The point is, sticking to such resolutions could reap serious benefits for the companies as well as for the users.

There are at least 100 reasons why each of these resolutions would be difficult for some companies to keep.

But that's why they're called resolutions. Take it from me, I know: Resolutions are worthwhile, even if you find you can't live up to them.

Frank Moldstad

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PC GRAPHICS & VIDEO

PUBLISHER'S NOTE

Visual Computing

The Internet represents the worldwide community, and the powerful PC on your desktop is your passport.

I am so pleased to see the national business media picking up on the fact that visual computing applications represent the next major leap in the process through which people interact with computers. The parallel developments of the Internet and the Web, combined with incredible advances in desktop processing and graphics power make this all possible. We are all trained to exchange information effectively through the use of some combination of text, images, audio, and video.

For the majority of computer users, however, the computer has been relegated to one-dimensional text status, with the occasional image. In a few short years, we'll look back on the end of this decade as a communications renaissance.

The Internet represents the worldwide community, and the powerful PC on your desktop is your passport. *PC Graphics & Video*'s purpose it to provide you with the tools and techniques to be an effective communicator in this new digital world.

For several years it has been difficult to explain the importance of video capture cards, digital cameras, scanners, 3D animation tools, scan converters, etc. to the many business professionals who see them and ask "why would I need that?"

Here's just one example. Video email is a relatively new application which is about to explode. It's quite possible that every sales and marketing person is about to become a video producer and editor.

The samples I've received and viewed recently deliver astounding quality. Think about how powerful this business tool will become. Let's not forget about all those AOL subscribers with video cameras and too much time on their hands. It could be huge. (No video flaming please.)

I hear so much about the impending explosion of video teleconferencing. Scary as it may be, I think we will inevitably be looking at each other regularly on computer screens when we communicate in a few years.

However, if you can receive text email today, you can basically receive video email today.

Well, video email is obviously one of my predictions of major drivers for our industry this year. However, my real point is that digital content creation is the communications currency of visual computing. It's so clearly an all-media environment. If you are heavily into digital imaging and 2D illustration for print, great. But don't ignore 3D and video production. Likewise, if you're a video editor, make an effort to take a closer look at the graphics side of the business. These related applications are in your future one way or another. You can count on it!

Have a great 1998.

Michael J. Forcillo

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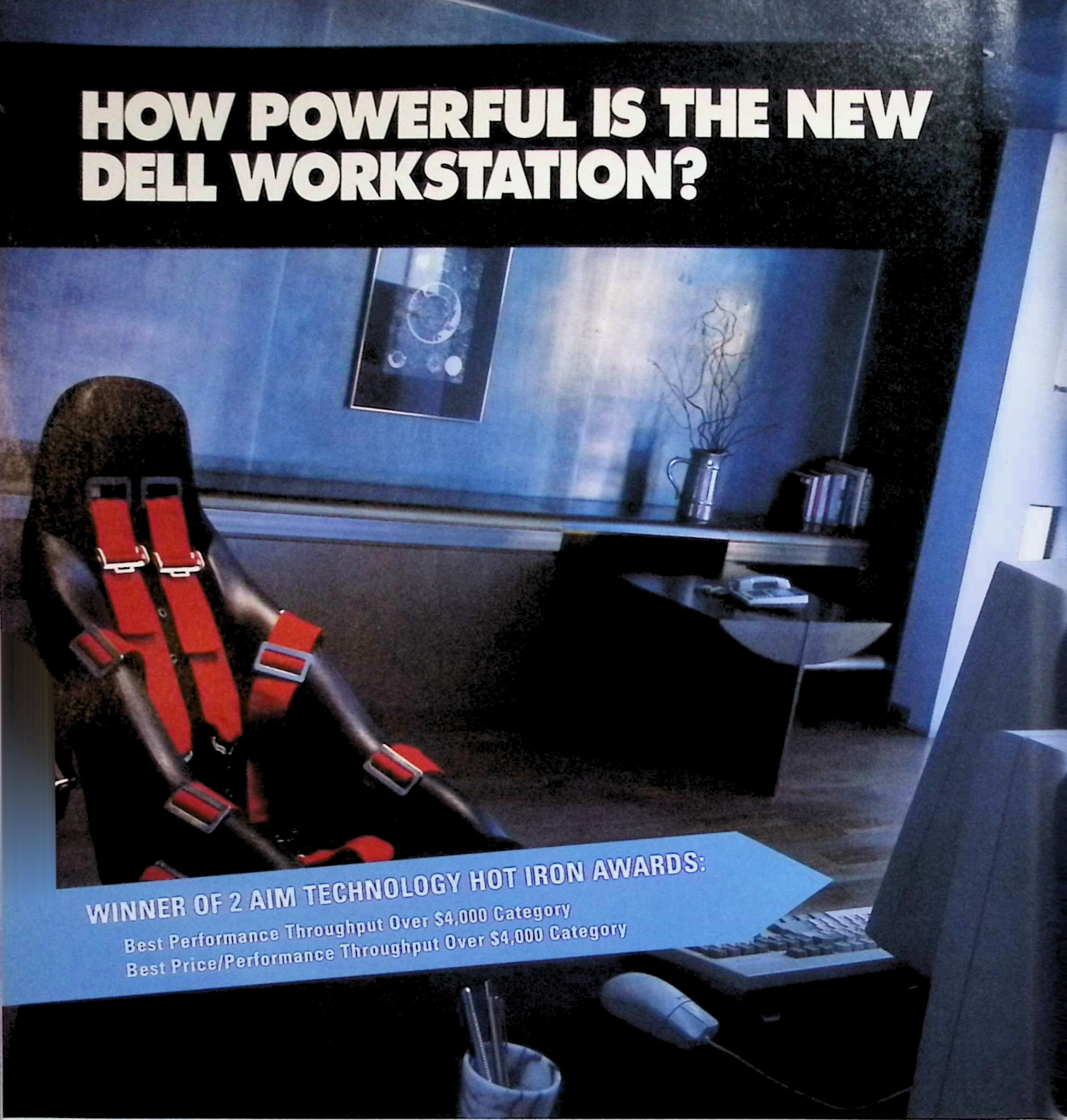

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Sun Ultra	Ultra 1 Creator3D Model 170E w/Creator3D	$446
SGI	O2 R5000/180MHz SCO2	$461
Digital	Personal Workstation 266i w/AccelGraphics AccelPro 2500TX	$558
SGI	Octane 1x175MHz R10000 SI w/Tram	$922

§Price per composite score. Lower number indicates greater price value. For more in-depth information, refer to www.specbench.org/gpc/opc/opc.cdrs.summary.html.

Dell's expertise in industry-standard technology gives the Dell WorkStation 400 a price performance edge over selected models from significant competitors. This chart reflects a 3D-graphics-oriented benchmark modeling an environment similar to mechanical CAD.

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FEEDBACK

Where you get a chance to tell us what you think–about the industry, our coverage, and what you would like to see more of in our magazine.

3D MODELING PROGRAM

I am looking to do a project that requires 3D modeling of some geological and artistic features in caves. (Currently, the project is set to begin in West China.) I recall seeing a software package featured in *PCGV* that dealt with 3D model construction from photographs. I've been searching for my past issues and other sources, but I still have had no luck finding packages like this. I would appreciate any help you can offer.

Michael Fu
akuma@nwu.edu@Internetpo
Northwestern University

Eos Systems has a product called PhotoModeler that enables you to make 3D models from photographs. You can contact them at (604) 732-6658, or on the Web at www.photomodeler.com.

The Editors

MICRONET RAID CLARIFICATION

Thank you for covering MicroNet Technology, and our DataDock product in "External Raid Subsystems" in the November issue ["Buyer's Guide"]. I would like to point out several inaccuracies that appeared on the chart on page 42: MicroNet supports 5.25-inch drives as well as 3.5-inch drives. The DataDock 525, which accepts drives with a 5.25-inch form factor, was designed to incorporate 3.5-inch mechanisms as well with the use of an inexpensive adapter. DataDock can be configured as a single-, two-, four-, six-, or seven-bay data storage solution. Our seven-bay maximum capacity is 63GB. In addition, we also offer a full-height, 5.25-inch 23GB drive. The maximum transfer rate is 40MB/sec. The RAID levels supported are RAID 0/1/3/5. DataDock modules are completely removable either individually or as arrays. The DataDock ships "standard" as a dual bus configuration. The DataDock also supports Windows 3.1, in addition to the MacOS and SGI.

Meryl Cook
MicroNet Technology

DOWN TO THE LAST PCI SLOT

Your "Buyers Guide" on affordable video editing [September] was exactly what I needed to make my decision as to what to get in video editing software.

However, you mentioned that Ulead's Media Studio Pro included video capture hardware; it does not! Therefore, I need your help in making a decision on what hardware to get. I need to compare Fast Electronics' AV Master PCI Bus NTSC M-JPEG 24-bit with miro's new miroVideo DRX PCI PC capture card. Or is there something better for less than $700?

I have a Gateway 2000 Pentium II 300MHz, with DVD drive, TV/FM card, sound card, and only one PCI slot left! Will a video capture card interfere with all this, or can I intergrate it with no problems?

R. Ordonez
rstopro@aol.com

Sorry about the typo—it should have said video capture software.

As for the comparison—I liked the Fast AV Master but haven't seen the miroVideo DRX card. However, all the miro cards I've seen so far have been among the best in their class, so I'd guess the new card will deliver on its promises. Configuring a nearly full PC for a video capture card can be a nightmare. One of the advantages of an intergrated video/audio capture card is that the audio part of the capture card can replace a stand-alone card. You have a real potential for hardware conflicts, but sometimes Plug-and-Play works surprisingly well. Good luck!

J.V. Bolkan

TOOLS OF THE TRADE

The following products are used in the production of *PC Graphics & Video* magazine. All editorial content and images are created, edited, and made ready for printing on PC-compatible machines.

EDITORIAL HARDWARE:

66MHz Intel 486DX2 mini-tower clones with 32MB RAM, Orchid 32-bit graphics adapters, CTX 17-inch monitors, Sound Blaster Pro audio boards, Mitsumi 4X CD-ROM drives, SupraExpress 336i SP modems, and Maxtor 320MB hard disks.

PRODUCTION HARDWARE:

Intergraph TD-3 100MHz Pentium workstations with 64MB RAM, 21-inch monitors, 4X CD-ROM drives, and 1GB hard disks; an Intergraph TD-4 dual 100MHz Pentium system with 164MB RAM. Other systems include 66MHz Intel 486 clones with 64MB RAM, #9GXE graphics adapters, ViewSonic PT813 21-inch monitors, Philips CDD 2000 CD Writer, MicroNet 200MB SyQuest drives, a SyQuest SyJet 1.5GB drive, and an Iomega Zip Drive.

SOFTWARE:

QuarkXPress 3.32 for Windows, Microsoft Windows 95, and Office 6.0, Corel CorelDRAW 7.0, MetaCreations Kai's Power Tools 3.0, Macromedia FreeHand 7.0, Adobe Illustrator 7.0, and Adobe Photoshop 4.0. In the course of a typical production, editors and artists will test and use a variety of other software and hardware.

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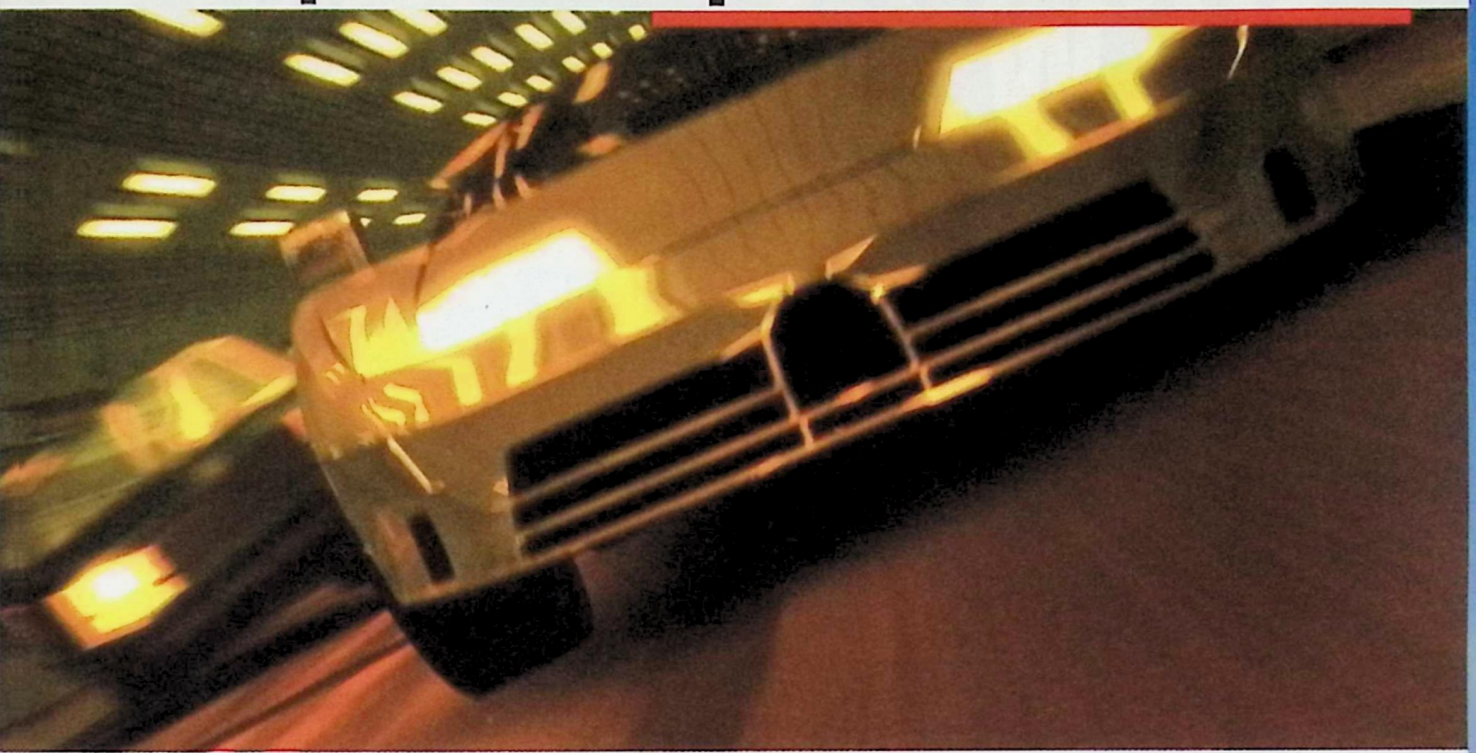

Mark Thompson & Jeff Goldman, animators. Fusion Films. Courtesy of Sun Microsystems, Inc. All rights reserved.

What's got the speed of the Starship Enterprise, more muscle than *Hercules* and the innovation of some of the world's hottest commercials? LightWave 3D 5.5 and it's got more under the hood than ever before.

We've added so many great new features, enhancements – even a gizmo or two – that it's almost impossible to imagine an animation program that could give you more ease or creative freedom. And, not only does LightWave 3D 5.5 work on multiple platforms, its new interface thinks like you do and feels familiar on any of them.

Its feature list is robust, to say the least. With new multi-threaded rendering, you'll fly through design work. Open dialog boxes greatly increase interactivity and direct workflow. For ultra-realistic lighting effects and particle rendering, you can't beat the powerful new volumetric engine. And if you need to do lip-sync or enhance your character animation, you won't want to do without Morph Gizmo. You won't have to either, because it comes standard with the program. In fact, from raytracing, MetaNURBS™, inverse kinematics and Bones to lens flares, Super Cel Shader, field rendering, compositing, OpenGL and tons of plug-ins, it's all included in LightWave 3D 5.5.

No matter how good you are, you'll find something new to love about LightWave 3D 5.5 every time you use it. Even more incredible, it gives you the same caliber work that comparable high-end animation programs do – for about one-third the cost. That's why it's in more Hollywood animation suites than any other 3D program. So put yourself in the driver's seat by getting LightWave 3D 5.5 today.

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Circle 6 Web # 220

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NEWSLINE

JANUARY 1998

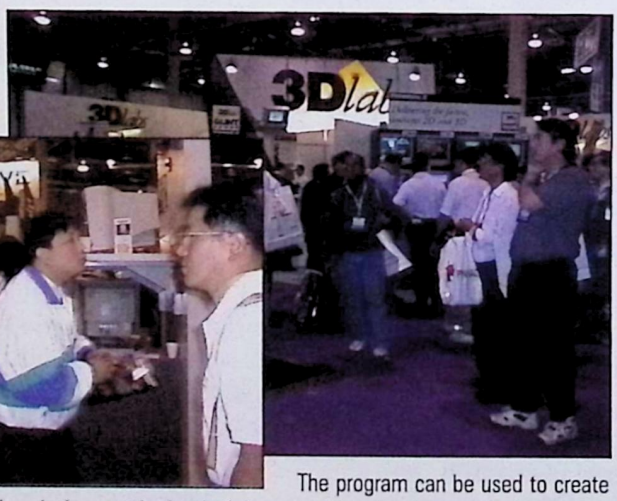
- Comdex displays the latest product and technology developments
- Intergraph, Intel in legal disagreement over patents
- IBM develops GMR hard disk technology

FALL COMDEX 97

Companies Showcase PC Multimedia Solutions

The "multimedia zone" at Fall Comdex bustled with booths that displayed the latest Web-development software, 2D and 3D graphics programs, hardware accelerators, sound cards, and 3D audio solutions.

Jasc's Illuminatus 4 was one of several key software announcements aimed at meeting the growing demand for corporate desktop publishing and design applications.



Photos by Amy Woods using an Epson PhotoPC 600.

Although the upstairs level of the Sands Expo and Convention Center represented only a fraction of the mammoth trade show, its exhibitors made big news with products and technology targeting the business communications market.

Visitors to Fall Comdex 97 in Las Vegas take a look at multimedia technologies and applications for creative content development.

The program can be used to create multimedia letters and greeting cards, interactive sales presentations, or corporate training CD-ROMs. Features include AutoNarrate for syncing text with voice-overs, drag-and-drop capabilities for objects and programming, built-in animation, and more than 10,000 image, sound, animation, music, and video clips. →

Intergraph Sues Intel; Intel Counters

On Nov. 17, 1997, Intergraph Corp. filed suit against Intel Corp. in U.S. District Court, charging the company with anti-competitive behavior and wrongful conduct in a disagreement over technology patents.

Intel, the world's largest manufacturer of CPUs, responded to the charges with a counter suit.

The patents in question cover a caching technology that is used in Pentium chips, including the Pentium Pro and the Pentium II.

Intergraph claims the technology was designed for its proprietary Clipper RISC chips, which are no longer used in its workstation products.

Intergraph also alleged that Intel withheld information pertaining to bugs that were found in Intel's PIIX4 chipset.

Intergraph, developer of Windows NT/Intel-based workstations, accused Intel of withholding technical and marketing support, as well as attempting to coerce it into relinquishing its patents on the Clipper RISC chip.

Additional charges included breach of contract and misappropriation of trade secrets.

In an open letter to shareholders, Intergraph's CEO and →

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Intergraph Sues Intel.....continued

chairman Jim Meadlock said, "The decision to file suit was a difficult one, given our formerly warm relationship with Intel and our dependence upon Intel's CPUs in our workstations, PCs, and servers. But that very dependence—coupled with Intel's use of their dominant position to coerce us to give up our patent rights—has forced us to this action."

Meadlock also accused Intel of failing to inform Intergraph of critical product information, refusing to provide marketing support, and undermining the company on multiple fronts by "cutting us off from critical product information and support, and trying to obtain rights to intellectual property."

Intergraph is asking for monetary damages and injunctive relief.

Speaking on behalf of Intel in *InternetWeek*, spokesman Chuck Mulloy said that Intel did not interfere with Intergraph's business relationships, and that the company was within its rights to withhold nondisclosure-agreements information from Intergraph. Intergraph has no right to the patents, Mulloy said.

"We have no obligation to anyone to share our confidential information," he said.

Mulloy said that some information had been withheld from Intergraph in error and that it was provided to the company when Intel's lawyers informed its technical staff that they were required to do so.

The five-year relationship between the companies has produced a broad line of Windows NT Pentium Pro and Pentium II workstations and servers, the latest of which is the ExtremeZ Graphics Workstation line for 2D and 3D prepress and publishing applications.

According to Meadlock, Intergraph intends to continue the development of Pentium II-based computers. He said that so far there has been no disruption in microprocessor supply from Intel.—Rogena Schuyler Silverman

INDUSTRY NOTES

- **The United Artists Theatre Circuit** has reached a deal with **Digital Projection** to install large-screen projectors from the Power Displays line into theaters in New York and San Francisco. United Artists will evaluate the Power 5dv projectors during video conferences hosted by the Satellite Theatre Network. The STN was set up to serve the corporate video conferencing market by providing a movie-style environment for large-scale virtual meetings. Jim Ruybal, STN's executive vice president, said the company chose Digital Projection because of the picture quality, contrast ratios, and ease of use of its product line.
- Howard Brown has been hired as vice president of sales at **Liquid Audio.** Brown, a former **Avid Technology** executive, will oversee worldwide sales of Liquid Audio's suite of software products for mastering, publishing,

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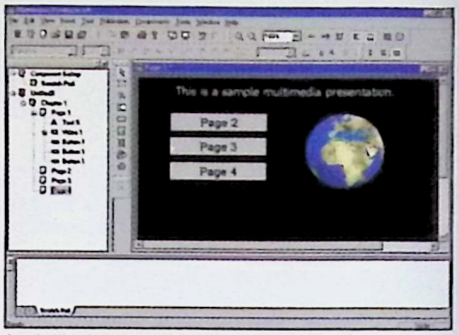
Circle 6 Web # 222

Fall Comdex 97 Highlights.....continued

Ulead Systems showed off a new version of PhotoImpact, the mid-level image-editing application targeting Web developers. PhotoImpact 4 offers an improved GIF Animator, Button Designer, and Background Designer; additional Web utilities including seamless self-tiling patterns and grid and partition elements; a PNG SmartSaver; and full integration with Microsoft Office 97, according to the company. One of the more clever features is the Kai's Power GOO-esque Transform Effects that enables users to tweak images in real time and incorporate them into an animation.

Business marketing manager Christopher Mills said Ulead will continue to offer and update GIF Animator and SmartSaver as Photoshop plug-ins "for the Photoshop community that can't bear the thought of switching to another image editor."



Jasc's Illuminatus 4 was introduced at Comdex. It offers the corporate graphics market an easy way to add multimedia elements to presentations and office publications.

On the hardware front, the "AlphaPowered" booth at Digital Semiconductor featured new PCs from 14 system vendors who announced support for the Alpha 21164PC chip.

Each of the systems is priced at less than $2,600 and features a scaled-down Alpha processor that offers a new set of motion video instructions for accelerated MPEG performance, according to the company. The primary market for these Windows NT machines is business customers looking for a desktop publishing solution, the company said.

Among the vendors are Aspen Systems, Carrera Computers, Enorex Microsystems, MaxVision Corp., and Tri-Star Computer.

Elsa showcased a flat-panel display with a sleek, metal handle for swiveling the monitor. Called the Ecomo LC-150, the display has a 16-inch viewable screen that the company says takes up 65 percent less space than a 17-inch monitor. It offers 1024 x 768 resolution at 75Hz and comes bundled with the Winner 1000 Duo accelerator based on the Virge MX chip from S3.

Panasonic created a buzz when it unveiled a palm-size, FireWire-compatible DV camcorder. The miniature device is the first by Panasonic to feature the IEEE 1394 interface.

The palm-size $2,500 DV710 Panasonic DV camcorder created a buzz on the Comdex show floor.

When the camcorder ships later this year—at a $2,500 price point—it will offer pictures with 50 percent better quality than a live television broadcast, according to the company. Other features include audio-recording capabilities, a 3.8-inch color LCD monitor, PhotoShot, which lets users record a still frame for up to seven seconds with audio, and Index Search, which fast forwards to the start of each picture or scene.—Amy Woods

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AcerView 56c	15" (13.7" Viewable Image Size)	1280x1024 @62Hz	iScreen® On-Screenl	.28mm
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IBM Develops GMR Hard Disk Technology

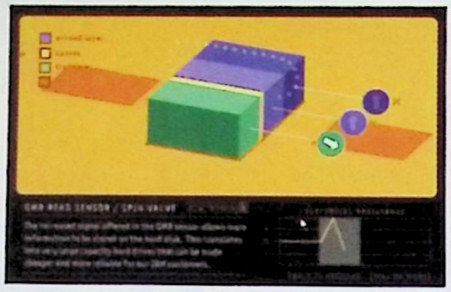
Company Also Delivers 10,000RPM 9.1GB Ultrastar 9ZX Server Drive

A breakthrough technology developed by IBM for PC hard drives enables the average desktop computer to hold up to eight hours of MPEG-2 video, according to the company.

Called "Giant Magnetoresistive," the head sensor of the drive offers major advancements over IBM's previous "Magneto-resistive" technology by delivering "record-breaking" density capacity, representatives from the company said.

The IBM Deskstar 16GP

Two new drives based on GMR include the 7200rpm Deskstar 14GXP, which ranges from 10.1 to 14.4GB, and the 5400rpm Deskstar 16GP, which ranges from 3.2 to 16.8GB. Among the first customers to benefit from the drives are desktop PC users, from game enthusiasts to design engineers, representatives from the company said.



A detailed explanation of how the GMR head technology works, including several Flash-animated sequences (an example is shown here) can be found on the IBM Web site at www.research.ibm.com/research/gmr.html.

IBM also has developed a 10,000rpm drive, the 9.1GB Ultrastar 9ZX.

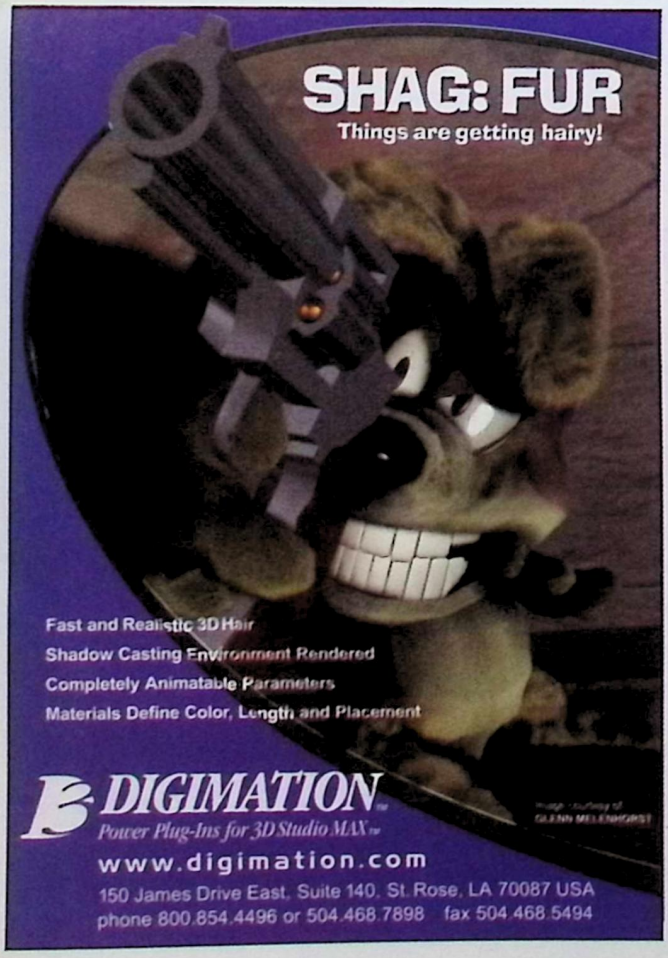
Based on the company's "Magnetoresistive Extended" technology, the Ultrastar drive targets the "mission-critical" server market, high-end workstations, data mining, and corporate intranets.—Amy Woods

INDUSTRY NOTES

CONTINUED

previewing, and selling music over the Internet. In other Liquid Audio news, the Redwood City, CA-based company has teamed with **DES,** a provider of end-to-end digital content creation solutions for professional developers. DES will produce special versions of Liquifier Pro and Liquid MusicPlayer to enable developers to send and receive digitized audio via the Internet for use in music, film, television, and advertising content.

- **Intergraph Computer Systems** is now operating as a separate company from Intergraph Corp. of Huntsville, AL. The manufacturer of Windows NT-based hardware expects its revenue to increase by 30 percent over 1996, and its volume to increase by 80 percent over 1996. The separation is part of Intergraph's plan to build the new company into the leading supplier of high-performance graphics workstations and PCs, 3D graphics subsystems, and servers.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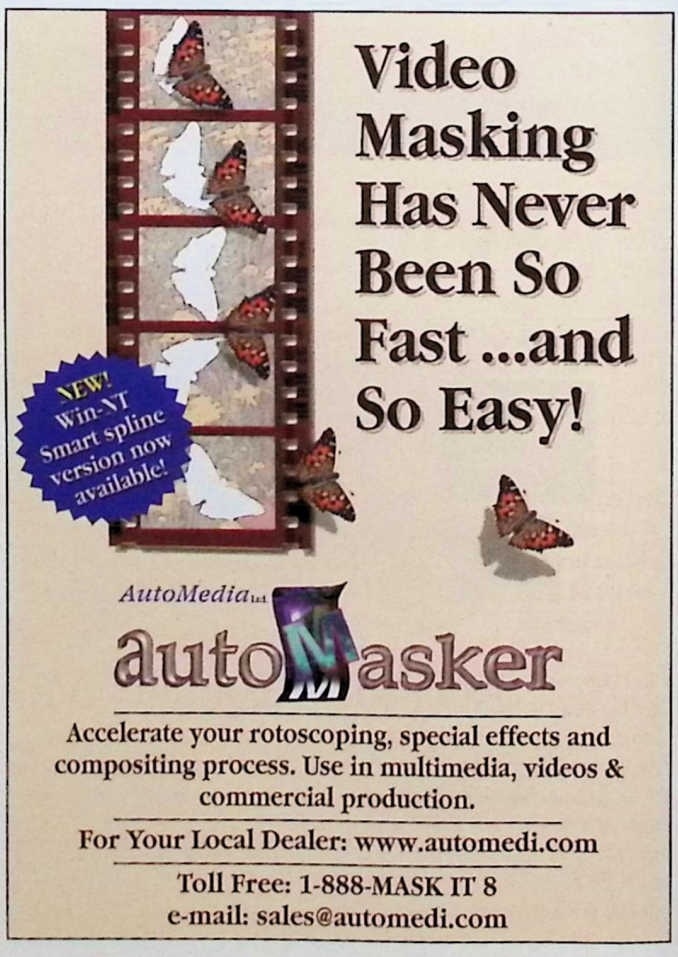
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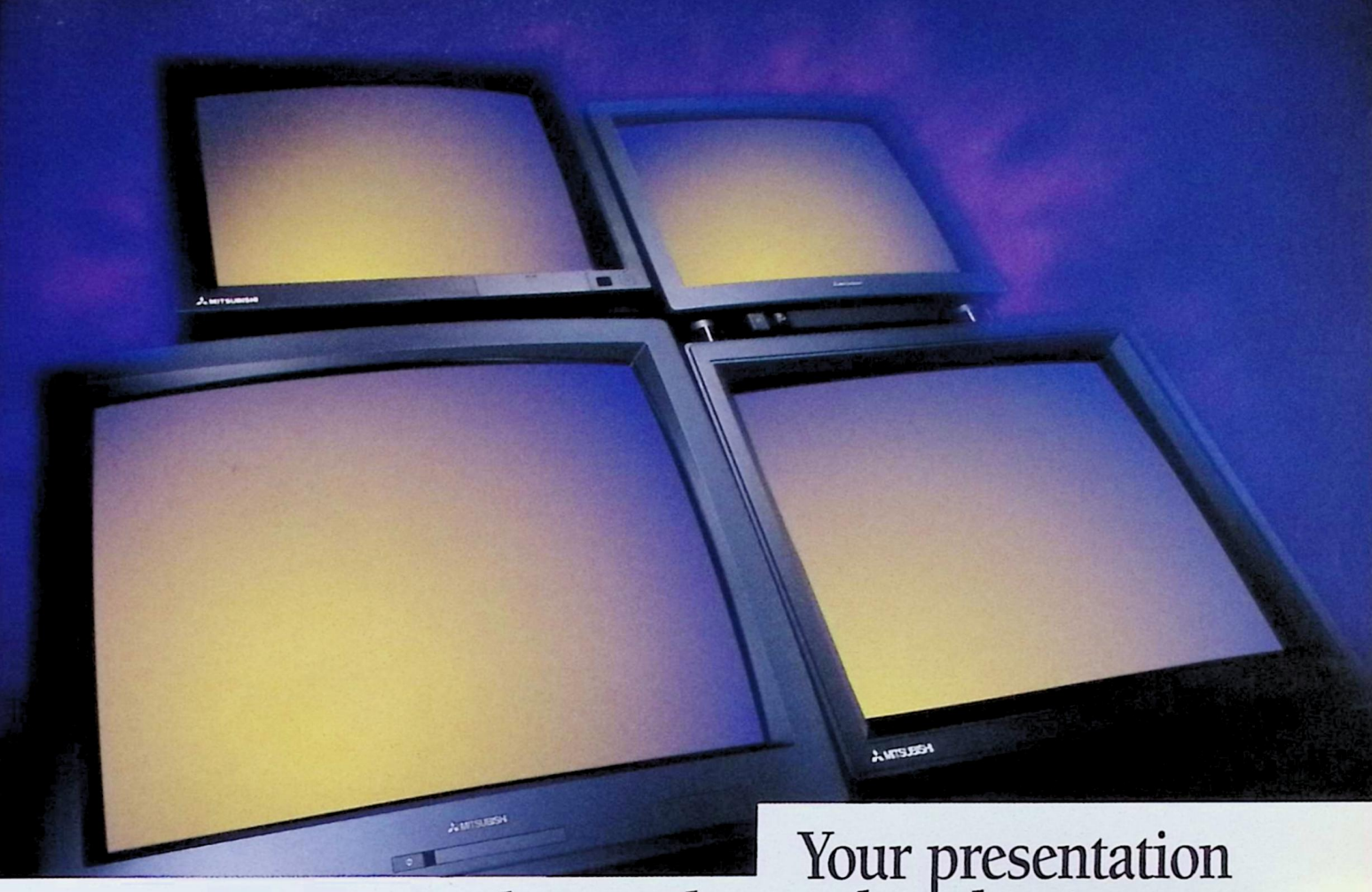

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MegaView 37 Plus	37"/35.0" DVI*	1024 x 768/75 Hz NI	H: 15-61 kHz V: 40-120 Hz
MegaView Pro 37	37"/35.0" DVI*	1280 x 1024/75 Hz NI	H: 15-85 kHz V: 40-120 Hz
MegaView Pro 42	42"/40.0" DVI*	1280 x 1024/60 Hz NI	H:15.75 & 20-64 kHz V: 45-120 Hz

* DVI: Diagonal Viewable Image.

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IN PRAISE OF CHEAP TOOLS

By
Mark Clarkson

A TOOLBOX FULL OF BARGAIN BUYS FOR MULTIMEDIA CREATION

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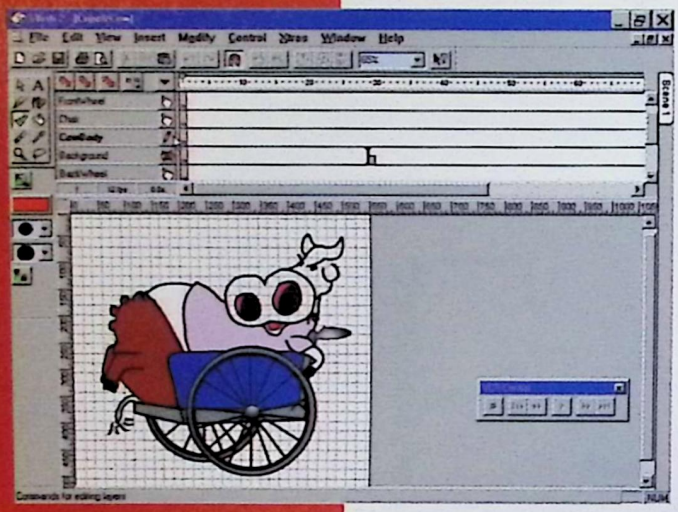
ILLUSTRATION BY EYO SAMA

VECTORS

If you're looking for a program for doing cartoons or other vector-based drawing, let me recommend Flash 2 (Macromedia, $199). This program has been around for a few years under a variety of names: SmartSketch, FutureSplash Animator, and most recently Flash.

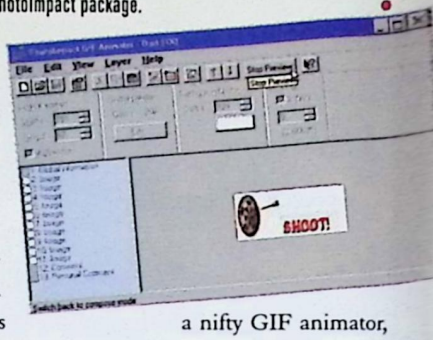


Macromedia Flash 2 is the premier 2D Web animation tool, but is also a simple, easy-to-use structured drawing program.

Ulead's PhotoImpact image editor has all the familiar image editing tools from paintbrushes to manipulatable layers to color correction and masking.

In all incarnations, it is a wonderful, easy-to-use, vector-based drawing program. It's nowhere near as sophisticated as, say, Adobe Illustrator or Macromedia Freehand, but it's nowhere near as complicated as those programs, either.

This is the only program I've ever used that enables me to sketch successfully with a mouse. When used in combination with my Wacom tablet, which the program supports, it is a dream. Flash also does animation—similar to traditional cel animation—which it will send out as an AVI, animated GIF, or its own Web-based Flash animation format.



GIF Animator is a very useful utility that can be purchased alone or as part of the Ulead PhotoImpact package.

Now that Macromedia has picked up the product, the Flash animation standard hopefully will gain the support it deserves. (www.macromedia.com)

BITMAPS

If you're working with bitmaps, get Ulead's PhotoImpact ($99). I've been using PhotoImpact and its big brother, MediaStudio, since they were both a product called ImagePals. While I use Photoshop for my heavy-duty image editing chores, ImagePals and its descendants haven't left my hard drive in all that time.

Ulead maintains what I call a "consumer Adobe" stance—consistently offering 80 percent of the functionality of products like Photoshop and Premiere, for 20 percent of the price.

The PhotoImpact editor is great. It's got all your favorite tools—paint, clone, burn, dodge, sharpen, paintable masks, individually manipulatable layers, all manner of color correction tools, plenty of filters and effects (or make your own)—in a friendlier package than Photoshop.

The interface gives you a nice mix of hand-holding and user control—you can opt for automatic color correction or hand-draw your own correction curves, for example.

And that's just the editor. PhotoImpact is actually a suite of tools that includes an album to keep your image (and other) files cataloged, screen capture, an image browser (think Windows Explorer with image thumbnails), a nifty GIF animator, an image viewer, a Photo CD browser, and more.

For the high-end professional, say a prepress operator, PhotoImpact won't cut it—it lacks Photoshop's obsession with printable colors, its support of the esoteric LAB format, and so forth.

But PhotoImpact is well up to the task of painting image maps and performing color corrections. (www.ulead.com)

Adobe is recently showing some interest in cultivating the consumer market itself. Its PhotoDeluxe 2 ($49) is built on the same core engine as Photoshop and is a good choice if you'd like your hand held during common image editing tasks such as background replacement and color correction.

Another perennial favorite is the very successful shareware editor, Paint Shop Pro ($69) from Jasc. Download a copy from www.jasc.com.

Or, for something a little more "painterly," consider MetaCreations' Art Dabbler ($49). (www.metacreations.com)

Dabbler sports a good subset of the tools found in Fractal Painter—crayons, paintbrush, charcoal, ink, water drops, pencil—and a handful of tools and effects. It even throws in the sound effects of pencil against paper. Dabbler is somewhat limited for "real" painting chores, and it has some annoying interface quirks, but this program is still a real value, and I go to it often when I need to knock out something with that "conventional" art look.

3D

I love 3D modeling and rendering, and I've collected several bargain 3D tools.

POV-ray was my first 3D renderer and it still holds a special place in my heart. POV-ray is a freeware ray tracer, and produces photo-realistic renderings, complete with fog, transparency, reflections, and refractions.

For those who like to get their hands dirty, POV-ray is just the ticket: It reads a special text programming language. No prepackaged renderer gives you more control over your lighting and surfaces than POV-ray, where you're elbow-deep in the code. Since it's free, its price/performance ratio is off the scale! Snag it at www.povray.org.

Beware, there is no modeler here. Needless to say, this seriously limits the complexity of models and scenes you can produce. Luckily, there are several modelers available that act as front ends for POV-ray.

I've spent the most time using Moray, $64, from SoftTronics, which has a distinctly CAD-ish look and feel. Caveat: Moray is still a DOS-only program, although the Windows version is imminent. Check it out at www.stmuc.com/moray/.

Another old favorite of mine goes by the ungainly name of Martin Hash's 3D Animation. (www.hash.com)

It's easy to create "painterly" images such as this sunset in MetaCreations' Art Dabbler. (Image by author)

If you are thinking of doing character animation, buy this program right now. Version 5, which should be final by the time you read this, is a complete rewrite of the program and features a new and better-integrated environment.

MH3D is a spline modeler—great for organic forms—with bones, inverse kinematics, and animatable constraints.

There are no fancy modeling tools, but the animation power is unmatched by anything costing less than $2,000.

Tricks such as adding more detail to an area and performing boolean operations can take a while to puzzle out, and the manuals aren't much help, but there's an enthusiastic user community that is very happy to share tips, tutorials, and support.

Over the years, I've had some trouble with versions of Hash crashing on my machine, but no more so than with, say, Caligari's trueSpace.

Beware Hash's inability to import other file formats. And, if you're looking for a tool to fly logos around, you should look elsewhere.

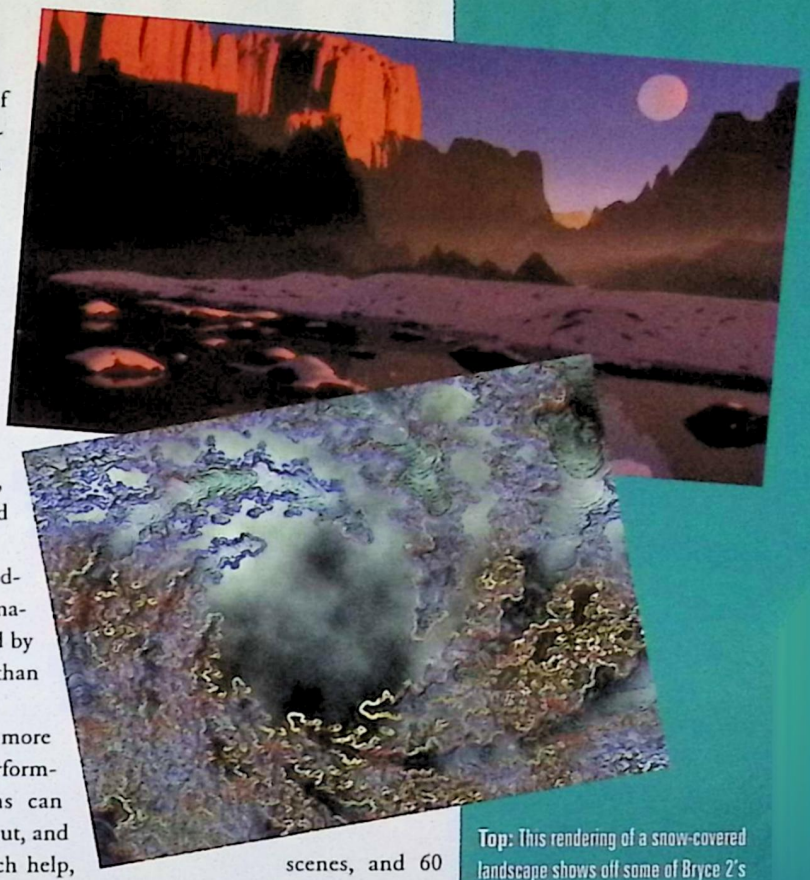
In fact, if you are doing flying logos, or crave access to the thousands of 3D models on the Internet, your bargain modeler of choice is Micrografx's Simply 3D. Not to be confused with the earlier product of the same name, Micrografx's Simply 3D is a full-fledged modeler and renderer for $89.95—a bargain at twice the price.

Simply 3D ships with 500-plus pre-built models, 250 textures, 50 scenes, and 60 animation primitives. The renderer is fast—featuring selective ray tracing—and capable of high-quality output.

Simply 3D doesn't pack as many professional features as MH3D, but it has superior support for the Web—including animated GIF output—and most will find Simply 3D easier to learn and use. (www.micrografx.com)

No tool on this list is more fun to fool around with than MetaCreations' Bryce 2, $129. Bryce 2 is, at its heart, a landscape generator—odds are that the overwhelming majority of Bryce 2 users see it as just that. But Bryce 2 has tools to create lots of basic and exotic shapes, especially with Version 2's boolean operations. Still, I wouldn't want to model a human being with it.

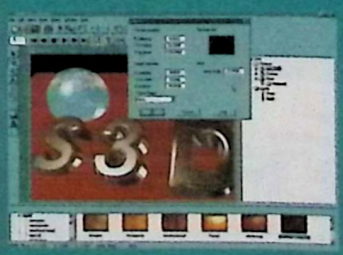
The interface, like all of Kai Krause's, is delightful and maddening by turns; I find it better suited to puttering around than to actually



Top: This rendering of a snow-covered landscape shows off some of Bryce 2's features such as its ability to generate sno

Above: This image started life as a FRACTINT fractal, then I applied a little post-processing in Ulead's PhotoImpact. (Image by author).

Below: Micrografx's Simply 3D features a full-fledged modeler and selective ray tracing for a bargain price of $89.95.



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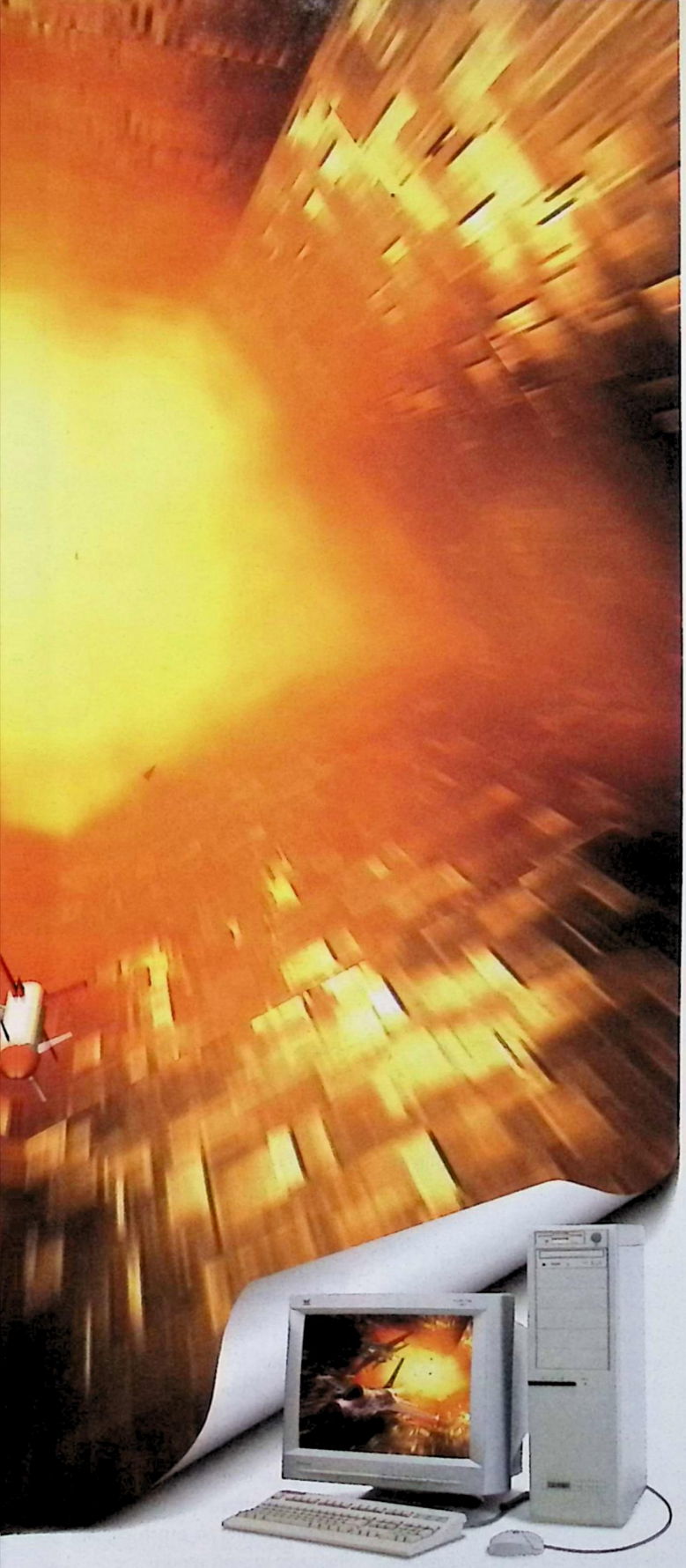

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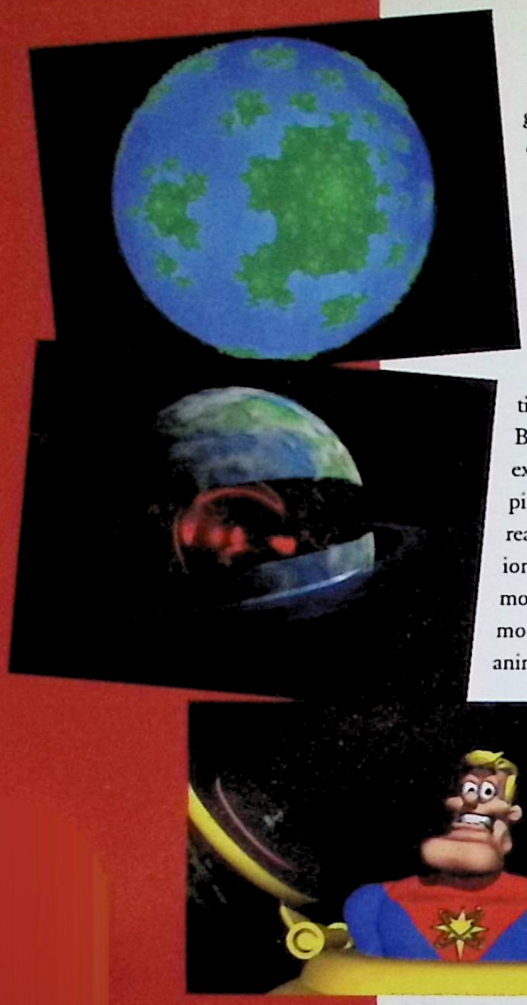


Top: This planet was created in FRACTINT. (Image by author)

Middle: This scene was modeled (that is hand-coded) and rendered entirely in POV-ray. (Image by author)

Bottom: Martin Hash's 3D Animation excels at character animation such as this cartoon superhero. Image courtesy of Cyclone Studios and the 3DO Company.

getting specific work done. Some of the operations are almost pathologically obscure. Bryce 2's biggest limitation has been that it didn't do animation. MetaCreations fixed that with Bryce 3D—which is expected to be shipping by the time you read this—by refashioning Bryce as a more general-purpose modeler, and adding animation capabilities.

Another favorite landscape modeler is Vista Pro. It lacks many of Bryce's modeling tools, but it is a fast, easy-to-use tool for generating landscapes, and version 4 goes for $69.

Vista Pro can generate landscapes at random, pull in real geographical data from Mars or the Grand Canyon, or turn images into landscapes (lightness= height.)

It has a straightforward user interface, texture mapping, lens flares, random trees, animated water, and a neat tool that automatically generates a fly-by of your landscape as seen from different vehicles.

Landscapes and their color maps can be exported as DXFs for use in other renderers. Plus this program really screams on a fast Pentium.

MISCELLANY

Another free program, Fractint, is, nominally, a fractal generator—it specializes in spitting out those psychedelic images that were all the rage a few years back.

While I've used Fractint mostly just for fun—and it is well worth the download just for that—it finds legitimate uses in my imaging work.

You can create 3D landscapes, fractal, and planets within the program itself; they're not quite "Babylon 5" quality, but definitely usable for some jobs.

I usually employ Fractint for its nifty palette cycling abilities. It can cycle the palette on fractals or any 256-color image and then save the results as an image stream for use in other programs—say, as an animated background for a video, or an animated texture map for a 3D render. Grab your free copy at: http://spanky.triumf.ca/www/fractint/fractint.html.

CAPTURING OUTSIDE CONTENT

Not all computer imaging has to originate within the computer. I once interviewed a slew of computer artists who used frame grabs from videotape as the jumping-off place for their work. After all, with a camcorder it's easy to go out on a video "fishing trip" and come back with an hour—100,000-plus video frames—of raw material to work from.

Captured video frames are not of the best quality—they're typically full of raster lines and other artifacts. Those who use them process the images sufficiently to remove the artifacts, or are using those frames in large part because of the artifacts—that is, they want the images to look like frame grabs.

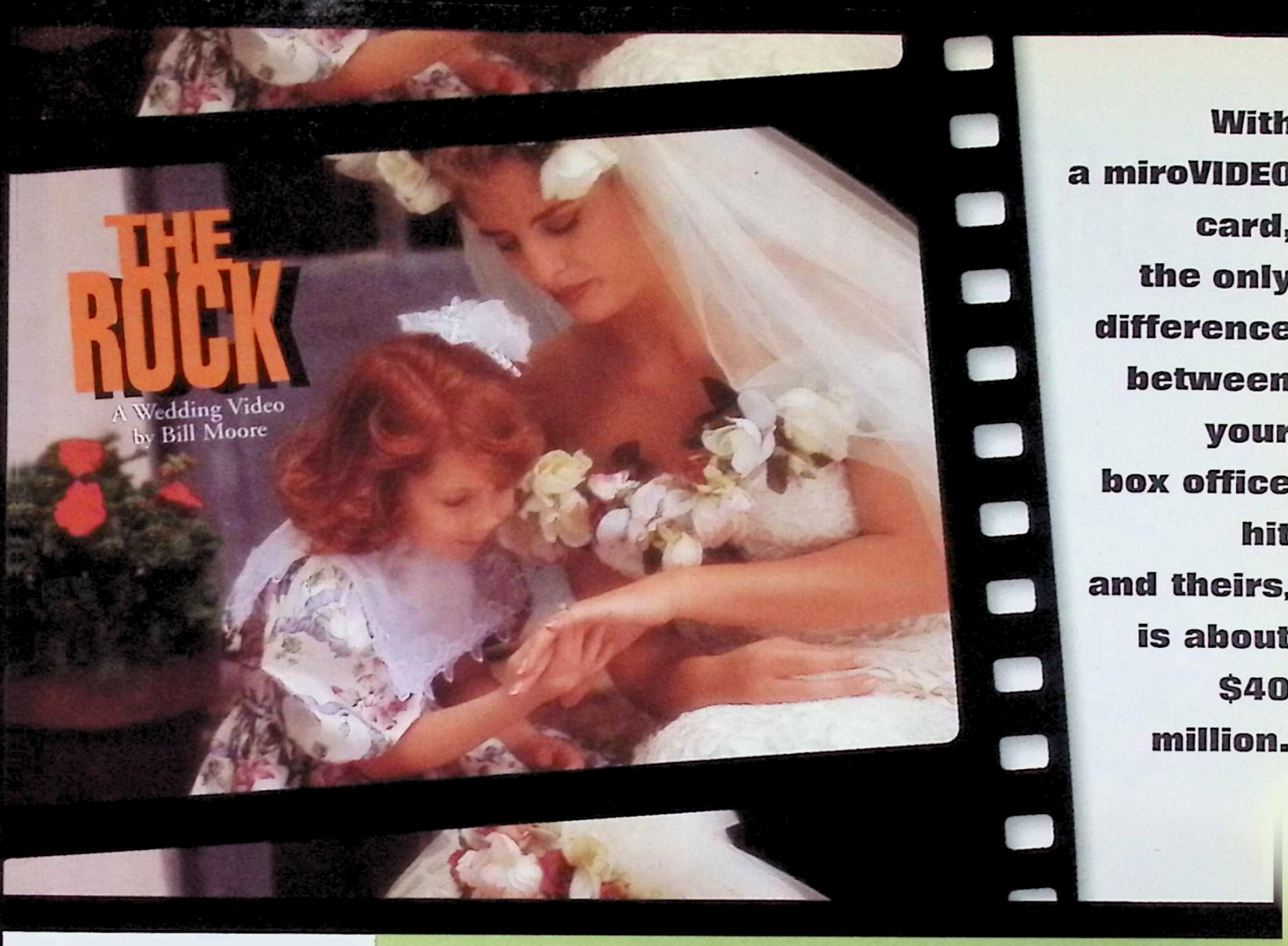
Snappy ($99) from Play, Inc., is a video frame grabber that plugs into the PC's parallel port. You can use Snappy in two ways: either to pull frame grabs from a running video source—cable TV, or a tape running in your VCR, for example—or to take (usually) higher quality stills from a fixed video source, such as a tripod-mounted video camera. I once used Snappy to make a short, stop-action movie. (www.play.com)

Another way to get inspiration into your computer is via a scanner. Flatbed scanners offering 300 to 600dpi are available for $150 to $300. If you have a scanner, remember that you can scan lots of things with it—not just paper. If you need a texture map of wood or a hand, you can scan some wood or a hand directly. You can scan anything that can be made relatively flat on one side—sand, coins, your ear, a bunch of crayons, paint spilled on clear acetate, the contents of a box of Wheaties—whatever. The main reason I value a flatbed scanner over the more conveniently sized document scanners is because I can scan anything I can pile onto it. Just remember to protect your scanner with something hardy and transparent—say, a sheet of Lucite—before you go dumping sand on it.

FINI

So there you have it—a whole slew of graphics tools, all for $200 or less. This is not an exhaustive list; these are my personal favorites. Just be aware that there are plenty of bargain tools that will let you produce professional quality work, without having so much explaining to do to your spouse.

Mark Clarkson lives and works in Wichita, KS, where, right now, he's explaining to his wife why he needs another $7,000 worth of software.



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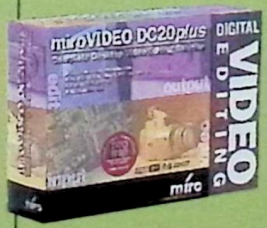

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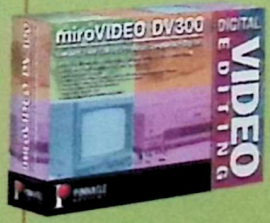

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The challenge was to create graphics that could be used for each of these output formats without a loss of quality and without duplicating effort.

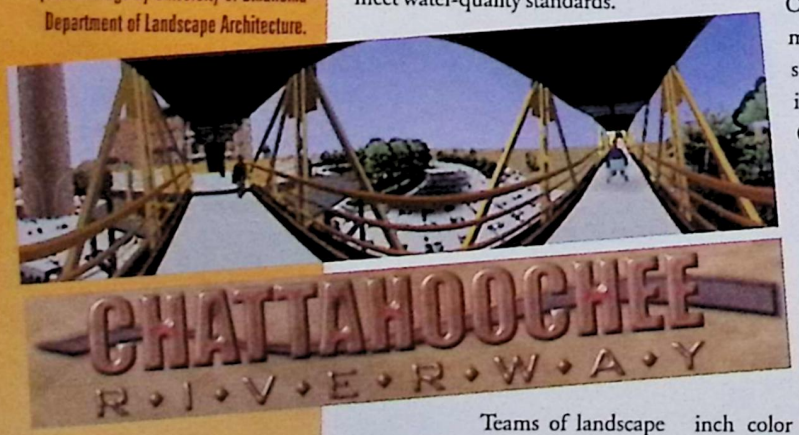
Creating Graphics for Multiple Media
Resolution vs. Output

by James L. Sipes

Graphic excellence consists of communicating complex ideas with clarity, precision, and efficiency. For a recent graphics-intensive project that focused on a polluted urban river, achieving that excellence meant using a variety of PC applications to create a visual master plan for future development along the Chattahoochee River. The Chattahoochee is the primary source of drinking water for residents of metropolitan Atlanta, but it's also one of the most polluted rivers in the country.

Several lawsuits have been filed in federal court because of elevated levels of pollution, and the city of Atlanta is paying $25,000 a day in fines for sewage spills and failure to meet water-quality standards.

form•Z provides an option for rendering a 3D model in a panoramic view, which is used to create QuickTime VR movies. The final movie is rendered at a resolution of 320 x 240 pixels. Image by University of Oklahoma Department of Landscape Architecture.



The title for the Chattahoochee Riverway was created in Photoshop at a resolution of 800 x 200 pixels. The image was downsized for the CD-ROM, but a new version was created at a higher resolution for the prints and poster. Image by University of Oklahoma Department of Landscape Architecture.

Teams of landscape architects from around the country joined forces to develop a master plan for a 12-mile stretch of the waterway and created design alternatives for five critical sites along the river. Called the Chattahoochee River Project, the endeavor presented some interesting challenges because of the range of scales, the multitude of graphics techniques, and the diversity of the output. The project included GIS-generated maps, photographic simulations, CAD drawings, 3D models and animation sequences, Photo CD images, digital video, QuickTime VR movies, and hand-generated images scanned into digital format. These images were combined to create a multimedia CD-ROM, a full-color poster map, and a series of 24- x 36-inch color prints. The challenge was to create graphics that could be used for each of these outputs without a loss of quality and without duplicating effort.

We quickly quit looking for a "super fix-it computer program" that could handle the complexities of the project. Instead, we depended on a suite of applications: Adobe Photoshop for creating backgrounds and buttons, manipulating images, and creating visual simulations; form•Z RenderZone (autodessys) and 3D Studio MAX (Kinetix) for modeling and animation; Microsoft PowerPoint for putting together mock-ups; Macromedia Director for producing multimedia CD-ROMs; and Adobe PageMaker for poster and print layout.

ISSUES OF RESOLUTION

Creating images that will work for a multimedia CD-ROM, oversize color prints, and a full-color poster is difficult because the demands of each are different. Images used for CDs are limited to a standard screen resolution of 72dpi and most layouts are either 640 x 480 or 800 x 600 pixels. We chose 640 x 480 because this resolution is available on most computers and is easy to display with

most projection units and LCD panels. The color prints were printed with an HP 650 inkjet printer on 24- x 36-inch sheets at 300dpi, meaning each image could have a maximum resolution of 7200 x 10800 pixels. The poster was even more cumbersome: The 30 x 42-incher was printed by a service bureau at 2200dpi, or a resolution of 66000 x 92400 pixels.

Ideally, we wanted to use the same images for the CD-ROM, the prints, and the poster and avoid having to modify or recreate an image for each. When possible, we tried to preserve the resolution of the images and size them accordingly. For example, an 800 x 600 pixel image can be cropped to fit a multimedia screen and also used as a small image on a print or poster.

One approach that worked well was the use of Kodak Photo CDs to document existing conditions along the Chattahoochee.

Photo CDs simplify some of the problems with producing multiple outputs by providing several versions of the same image at different resolutions.

The two most common Photo CD options are the Photo CD Master discs and the Photo CD Master Pro discs. A Photo CD Master format has five default resolution settings and a Photo CD Master Pro has six.

We used different resolutions of the same image for the three products: 512 x 768 for the CD-ROM, 1024 x 1536 for the color prints, and 2048 x 3072 for the final poster.

For many images, it became clear that we would have to create custom versions of each image or resize an image to fit the requirements of a specific output.

Both are problematic because they take additional time and effort and can have a negative impact on image quality.

When possible, we tried to work with vector-based images because they are mathematically defined and are resolution-independent. That means they are not defined by a fixed number of pixels and are automatically scaled for any output device at any resolution.

Most maps and plans for the Chattahoochee were generated in vector format with AutoCAD, exported as EPS files, and then rendered with Photoshop and Fractal Design Painter.

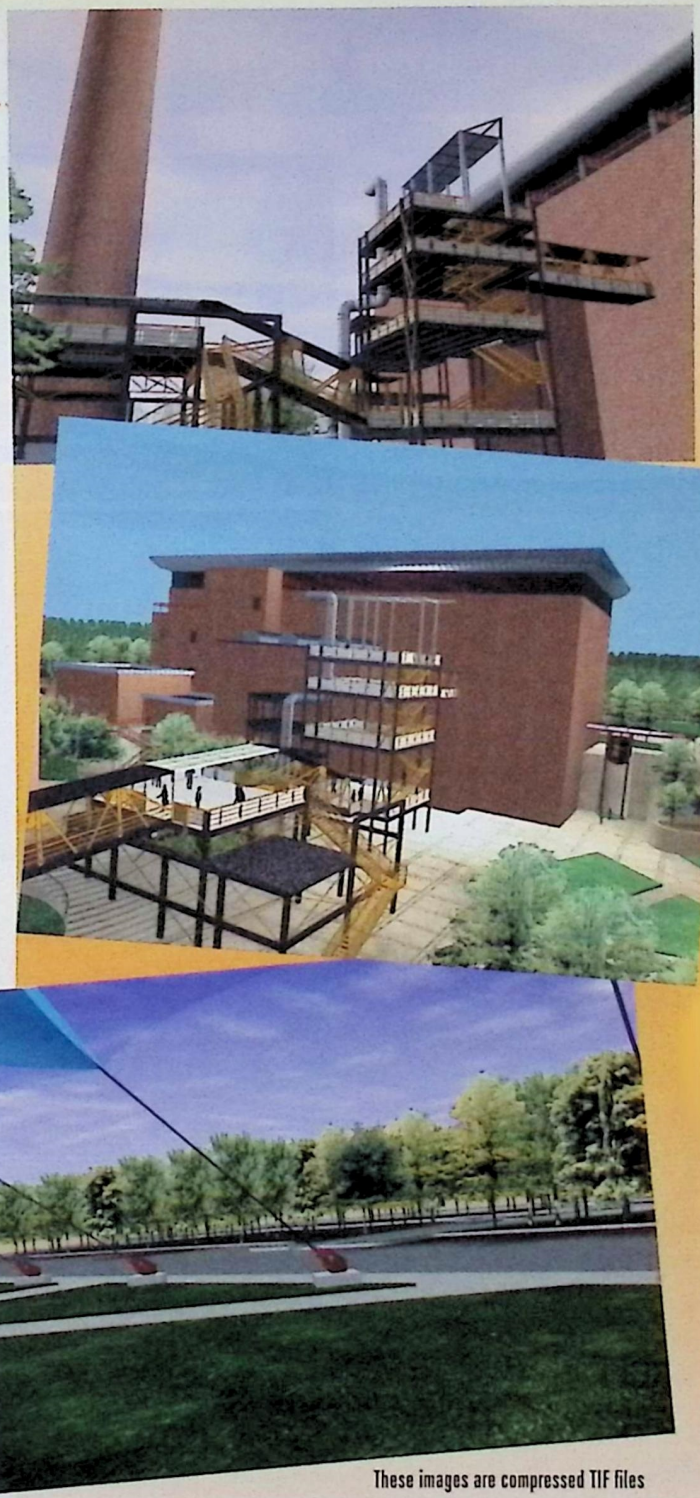
The EPS files can be saved at any resolution, but need to be aliased so that mask selections and fills work properly. In general, we used a minimum resolution of 3000 x 3000 for all exported EPS files.

3D modeling and animation programs also are vector-based and produce output in a range of resolutions.

The CD-ROM version of the project included both still images and animation sequences with a resolution of about 520 x 420 pixels.

The animation sequences—fly-overs, walk-throughs, and the like—were a key component of the project because they enable the viewer to interact with a design proposal much better than still images. Because the 3D models were vector-based, still images could be rendered at a resolution of 4000 x 4000 pixels for the prints and the poster. Rendering a file of this size takes a great deal of computer time, but required only minimal additional effort on our part.

Raster images, on the other hand, are not nearly as easy to modify or resize as vector images.



These images are compressed TIF files at 1200 x 1600 pixels. They are the 3D models of design proposals for converting an old incinerator building into a recreation center. The vector-based models can be rendered at different resolutions to match a specific output option. Images by University of Oklahoma Department of Landscape Architecture.

Raster images do an excellent job of portraying photographs and continuous-tone images that require subtle gradations of shades and color. But raster images are created with a fixed number of pixels and are resolution-dependent, meaning that they can appear jagged and lose detail if scaled onscreen or printed at a high resolution.

IMAGE RESAMPLING

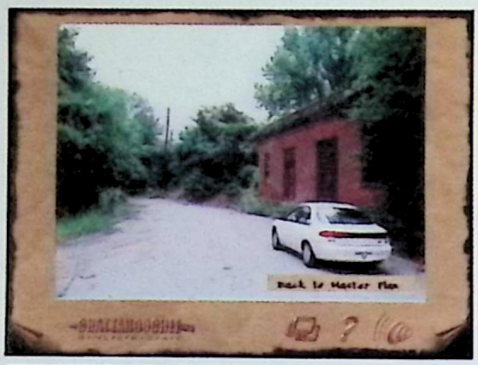
When changing the number or proportions of pixels, computer programs have to resample an image and use an interpolation method to increase or decrease the size and resolution of the image.

Downsampling, or decreasing the number of pixels, requires deleting information from an image. When increasing the number of pixels, a program has to generate new information from the existing pixels. Some interpolation methods are effective, but you cannot improve the basic quality of the original image. The results are often fuzzy and of poorer quality than the original.

Text and detailed line drawings in particular do not hold up well when resolution is altered. When enlarged, text becomes grainy and lacks the crispness and clarity typically expected. When reduced, text can become unreadable. Whenever possible, we avoided including any text on an image that had to be scaled, and generated all text in vector format.

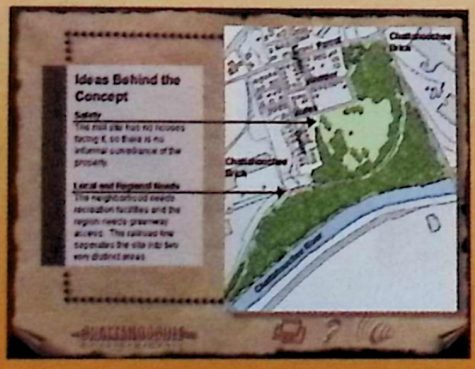
When it was not possible to preserve the original resolution of an image, we used Photoshop to resample images. Photoshop provides three options for interpolating images during resizing: Nearest Neighbor, which is the fastest but least precise approach; Bilinear, which produces medium quality at a medium speed; and Bicubic, which produces the best results but also takes the longest. We always used Bicubic interpolation because the time it takes to resize an image is temporary, but the quality of the final image will have a lasting impact on the viewer.

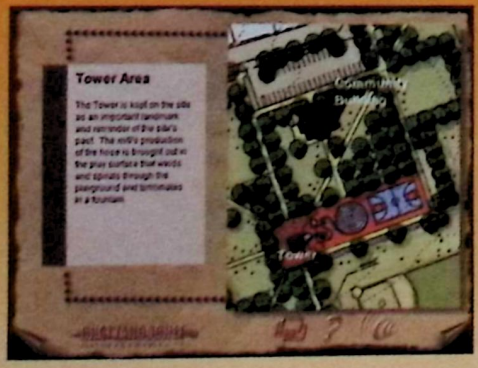
Our final step was to apply Photoshop's "Unsharp Mask" filter, which helps refocus the image and can dramatically improve quality.



Left: Visual simulations are difficult to adapt to different types of output because they are raster-based and it is easy to lose the detail that is necessary for the proposed design to look somewhat realistic. Images by Terrence DeWan and Associates.

Below: Animation sequences are a creative way to make a design seem more inviting and accessible. Selected frames from an animation also can be used for the prints and poster. Image by the Berkshire Design Group, Inc.





Most plans were created in AutoCAD and then exported as EPS files for rendering in Photoshop and Fractal Design Painter. These designs show a proposed neighborhood park that includes parking, ballfields, and play areas. Images by the Berkshire Design Group, Inc.

PROBLEMS WITH SIMULATIONS

The visual simulations for the Chattahoochee River Project proved to be the most difficult images to prepare for the multimedia CD-ROM, color prints, and poster.

A visual simulation shows what could be rather than what is. Most of these simulations strive for a high level of realism and can take anywhere from a couple of hours to several days each to complete. This before-and-after approach is very effective for communicating design-oriented ideas.

We used Photoshop to create most of the visual simulations because the program is particularly adept at working with high-resolution images and supports maximum pixel dimensions of 30000 x 30000 per image. It also uses a technique called image caching to help speed the re-draw of high-resolution images. With image caching, a lower-resolution version of an image is used for basic tasks, including applying filters or making color changes.

Choosing the appropriate resolution for a visual simulation involves a compromise between image quality and file size.

Most simulations were created at 1280 x 960 pixels because smaller images lack the necessary level of detail, and larger images take too long to manipulate and are not cost-effective.

Downsizing proved effective for some simulations, but many were split into two or more images when imported into Director for the CD-ROM.

Instead of enlarging the simulations for the prints and poster, we

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kept the resolution the same and reduced size to preserve an acceptable level of clarity and detail.

SELECTING THE RIGHT TOOLS

The original page layout for the CD-ROM was developed in Photoshop and then imported into Director.

In Director, all text, images, and animation must be imported as cast members before the files can be used. Files can be imported and stored inside the Director movie file, linked to an external file that imports the data each time the movie runs, or the file can include the original data so it can be used with an external editor.

In general, we found no real advantage in one import approach versus another when it came to resizing data.

We did find the 640 x 480 screen size to be a major restriction, especially because Director does not import vector images.

All vector images must be converted into a bitmap format. One approach you might be tempted to try is to use the "linking to a file" option because it is especially beneficial for large, unwieldy media including sound files and large bitmap images.

You can then use Director's "Modify>Transform Bitmap" to modify the size of a cast member to an appropriate size. The problem is that taking this approach will dramatically decrease the speed at which your multimedia CD-ROM will run, resulting in unsatisfactory performance.

Many of the raster images we used were created with the 24- x 36-inch color prints in mind. Our idea was to reduce these images in size or crop them to work in Director, and then enlarge them slightly or decrease their size when sending them to a service bureau for the final poster.

Most of the prints were created at a resolution of about 4000 x 6000 pixels, or 167dpi at the poster size of 30 x 42 inches. This proved to be a reasonable compromise in-stead of the 7200 x 10800 pixels available if we printed at 300dpi.

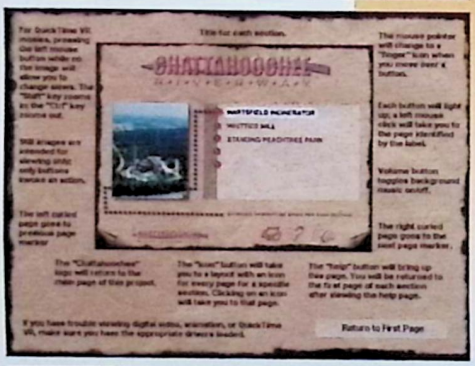
The file sizes were manageable and the final prints were clear and easy to read, especially from a distance. Surprisingly, the poster was the easiest part of the project.

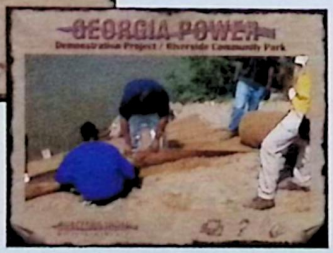
We developed more than 200 images that were included on the CD-ROM and wanted to include a representative sampling of those images. Reducing their size—most were between two and three inches on the final poster—allowed us to include several images and helped preserve image quality.

Both the 24- x 36-inch prints and the 30- x 42-inch final poster were developed in PageMaker. We used PageMaker because it is a fairly easy process to import large images and add text, and most prepress and computer graphics service bureaus can use the software.

Instead of creating one huge PageMaker file, all files were linked to the original images, making it easier for us to load images on Iomega Zip disks and send them to the service bureau.

We sent PageMaker files to the service bureau to make minor changes to the files if needed, verify print settings, and perform all necessary prepress tasks.





Left, top: A 3D landform model is an effective technique for showing the roads around an existing landfill. Image by Terrence DeWan and Associates.

Left, middle: The page layout for the multimedia CD-ROM was created in Photoshop at a resolution of 1280 x 960 and then reduced to 640 x 480 pixels before being imported into Director. Image by the Berkshire Design Group, Inc.

Left, bottom: The AutoCAD-generated plans for a proposed plaza were exported as EPS files and rendered as TIF images in Photoshop for use in the CD presentation.

Below: Community involvement was a major goal of the project.

Above: Aerial photographs taken from a helicopter provide an excellent view of the Chattahoochee River and surrounding land. Because the photos were stored on Photo CDs, they could be adapted easily to fit almost any need. Photograph by Tom Lamb.

CONCLUSION

The successful completion of a job as complex as the Chattahoochee River Project requires a great deal of pre-planning in order to produce a multimedia CD-ROM, color prints, and full-color poster map in a timely and efficient manner. Understanding the possibilities and limitations of both raster and vector graphics is essential for this type of project.

James L. Sipes is a professor at the University of Oklahoma's College of Architecture.

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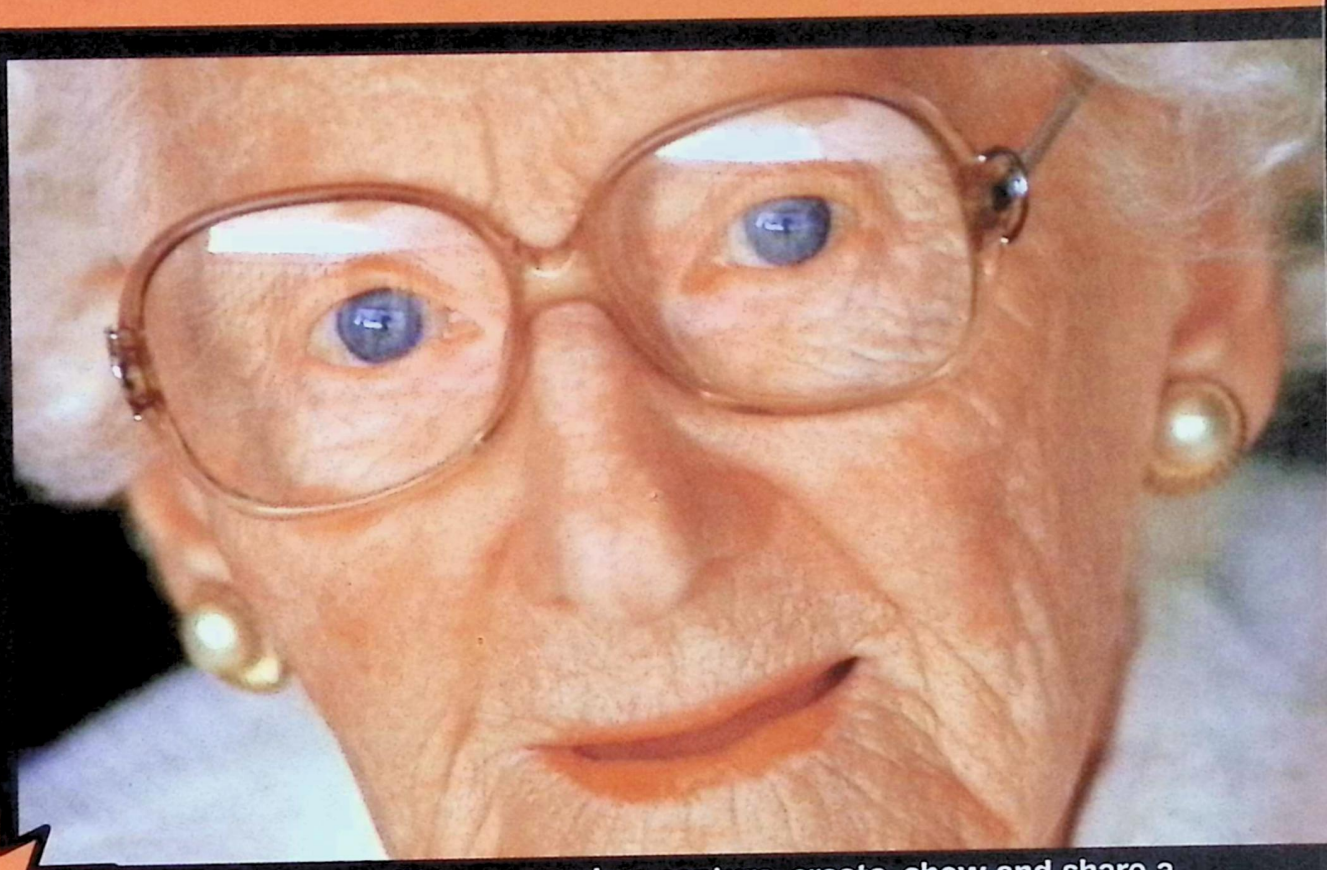
PHOTO graphic EDITOR'S CHOICE AWARD ★★★★★



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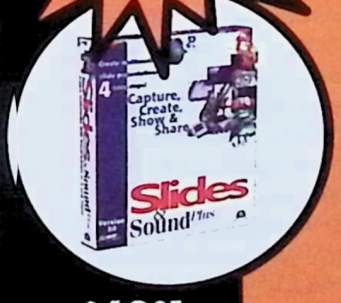

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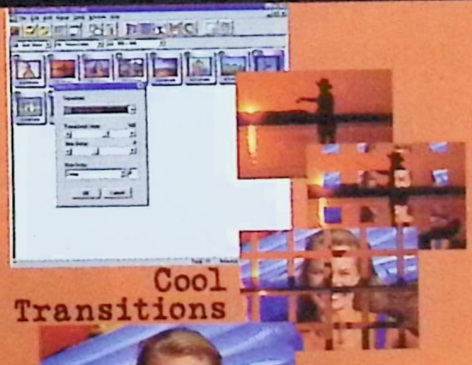

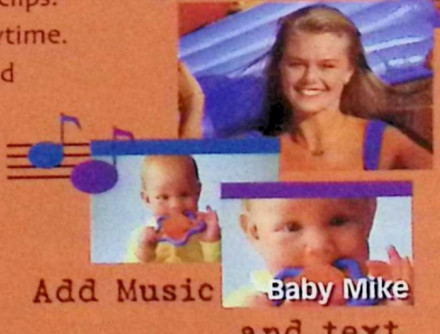

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Circle & Web # 228

Photoshop Plug-In Power

By J. Scott Hamlin

The latest Photoshop plug-ins show a trend toward specialization or utilitarian tools, even if special effects-oriented plug-ins still dominate.

Digital designers have always had an insatiable hunger for more power. Fortunately, Adobe Photoshop-compatible plug-ins have long answered that need by piggybacking new capabilities to programs that we often already know how to use. As our needs have increased in sophistication, so have the plug-ins. The latest plug-ins shows a trend toward specialization or utilitarian tools, even if special effects-oriented plug-ins still dominate.

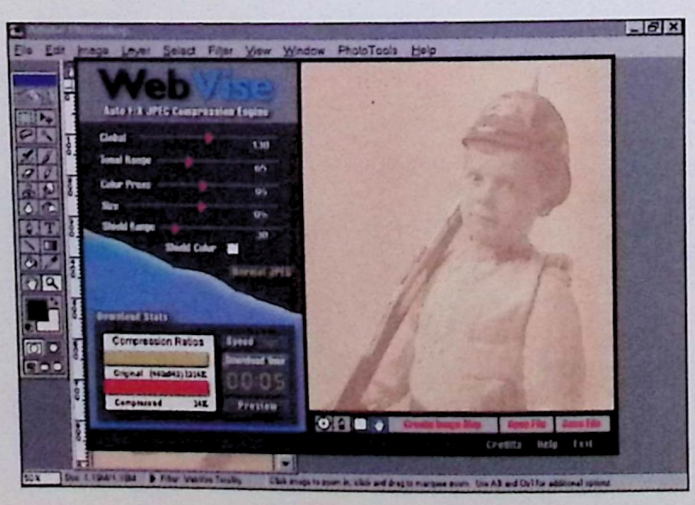
Web-oriented add-ons are among the newest genre of Photoshop-compatible plug-ins. The Web explosion continues to affect nearly every facet of our daily lives and plug-ins are no exception.

Web plug-in collections such as Auto F/X's WebVise Totality, Ulead's Web Razor, and Digital Frontiers' HVS WebFocus have emerged as one of the hottest new plug-in genres.

WebVise is a particularly valuable collection of six filters that include digital watermarking, advanced JPEG and GIF compression engines (both with integrated image map creation tools), an optimized dithering engine, and a plug-in for creating GIF animations from within Photoshop (using each layer as a frame in the animation).

WebVise Totality also features a plug-in for creating Hybrid Web Safe Colors. Unlike other standalone hybrid Web safe color plug-ins such as Boxtop's Color Safe or RDG Tools' Ditherbox, which force you to create colors by mixing them yourself, WebVise Totality's plug-in enables you to simply choose a color from Photoshop's standard Color Picker and the plug-in automatically creates a range of hybrid colors based on the selection. WebVise Totality also supports batch processing.

Ulead's seven plug-in filter collection Web Razor also features optimized JPEG and GIF export engines. Although its image map utility is separate, it enables you to use Photoshop's robust selection tool to create the selections for the image map. There are also several filters for creating Web media,



WebVise from Auto F/X features six plugins including JPEG and GIF optimization export filters with integrated image map support along with a superb Hybrid Web color filter and a filter that enables you to create GIF animations within Photoshop.

PRODUCTS REVIEWED

- Altamira Group Genuine Fractals
- Andromeda Series 1-4, Velociraptor, Drop Shadow
- AutoFX Page Edges, Ultimatte Texture Collection, Photo/Graphic Patterns, Typographic Edges, Photo/Graphic Edges, WebVise Totality
- Chroma Graphics Chromatica, Magic Mask
- Cytopia PhotoOptics
- DigiEffects AgedFilm
- Digital Dominion Cinematte
- Digital Frontiers HVS ColorGIF/JPEG/WebFocusPro
- Extensis PhotoTools 2, Intellihance 3, Mask Pro
- Filter Factory
- Human Software Squizz, Textissimo, OttoPaths, Design Collection
- MetaCreations KPT 3, Convolver, Actions
- RDG Tools Ditherbox
- Ulead Web Razor

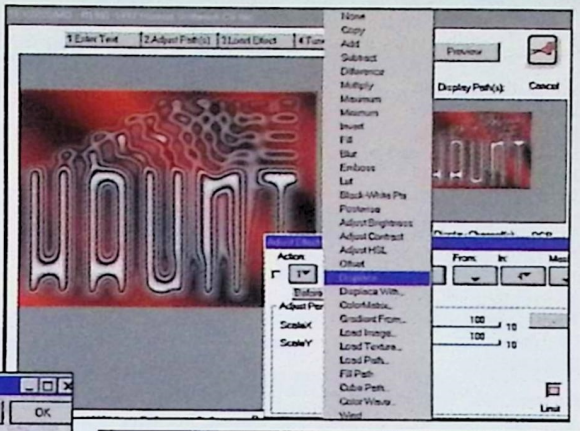
including filters for button generation, seamless tiles, borders and frames, and drop shadows. The package also comes with several stand-alone applications, including a photo viewer, but most notably Ulead's excellent GIF animation utility.

HVS WebFocus is a two-filter set that includes HVS ColorGIF and HVS JPEG, two outstanding GIF and JPEG optimization engines. Both provide more robust options than found in WebVise Totality or Ulead Web Razor. HVS ColorGIF offers comprehensive control over the color reduction process, including controls over gamma, thresholding, controlled weighting of color allocation, partition size, and set point.

HVS JPEG compression can easily be optimized for common types of images, including portraits and textured images.

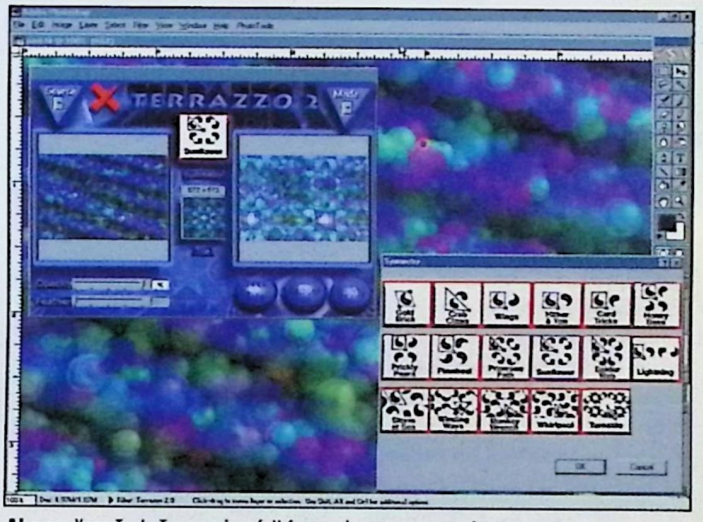
Altamira Group has created a Photoshop plug-in called Genuine Fractals that Web designers as well as print designers should find very useful.

Genuine Fractals compresses images by encoding them into mathematical algorithms. The truly amazing thing is that the image becomes scalable and resolution independent. Altamira Group quotes examples of 40MB being melted down to between 1.2 and 6.4MB. Thus, you can scan a poster-size image and still reasonably send it over the Internet to your service bureau. Of course, Web images also benefit from compression ratios of 4:1 to 125:1, depending on the image detail. But the downside is that the compressed image is stored in a proprietary format (fif) and a free plug-in is required to view the images on the Web.



Left: Human Software's Textissimo excels at generating unique and fresh text effects.

Far left: Chroma Graphics Magic Mask provides robust masking tools that utilize sophisticated color matching and edge detection technologies that make masking even the toughest images a snap.



Above: Xaos Tools Terrazzo is a full-featured texture-generation program.

ENHANCEMENT & MASKING

Another trend in the plug-in market is photo correction and masking filters. Vendors seem to be recognizing that special effects filters are fun, but we've all got to earn a living first. The bread and butter tasks of photo correction can be made easier with the likes of Extensis Intellihance or Cytopia PhotoOptics. Intellihance is a single filter that provides one-step color photo correction for cast removal, tone controls, luminance, saturation, descreening, despeckling, sharpness, contrast, and more. If you are in a hurry, you can simply let Intellihance correct your image or you can select the preferences control for more fine tuning. Ample resizeable and zoomable preview windows provide instant feedback, and before-and-after histograms provide more technical feedback as you tweak.

Cytopia PhotoOptics is a an eight-filter set that facilitates image correction based on traditional photographic color correction principles. PhotoOptics provides color correction options not available with Photoshop's adjustment tools.

For instance, the PhotoOptics Levels filter enables you to stretch out the black-and-white point of an image—unlike Photoshop's Levels filter, which will do so only with the tones in the image. In addition, filters such as the PhotoFilter enable you to reproduce traditional gel and lens effects, create accurate sepia tones, and perform corrections for color castes. One of the hottest filters is the "CSI Negative" filter, which generates true color negative transpositions from color negative scans.

Masking also is getting a lot easier with a range of new Selection- and Path-oriented filters including Chroma Graphics Magic Mask, Extensis Mask Pro, Human Software's OttoPaths, and Digital Dominion's Cinematte. Magic Mask provides a range of unique and advanced masking tools. A "Color Brush" selection tool works much like Photoshop's Magic Wand, only it masks by looking for multiple color ranges as defined by what you paint over. The "Magic Lasso" tool uses sophisticated edge detection technology that snaps the lasso magnetically around edges of objects. There is also a nudge tool for fine-tuning masks and a "Density Mask" for difficult gradient masking (such as skin

COMPANY	PRODUCT	ADD-ONS/ FREEBIES	# OF FILTERS	PRICE
Altimira Group	Genuine Fractals	plug-in	2 (import/export)	$129.99
Andromeda	Series 1—Photography	N/A	8	$89
	Series 2	N/A	1	$89
	Series 3	N/A	1	$109
	Series 4	Textures on CD	1	$109
	Velociraptor	N/A	1	unavailable
	Shadow Filter & Trade	N/A	1	unavailable
Auto F/X	Page Edges	over 1,000 effects	1	$179
	Ultimate Texture Collection	1660 textures	1	$129
	Photo/Graphic Patterns	666 patterns	1	$99
	Type/Graphic Edges	470 effects	1	$179 each
	Photo/Graphic Edges (1, 2,and 3)	hundreds of effects each	1	$129
	WebVise Totality	standalone versions	6	$129
Chroma Graphics	Chromatica	hundreds of palettes	2	$149.95
	Magic Mask	N/A	1	$99
Cytopia Software, Inc.	CSI PhotoOptics	N/A	8	$99.99
DigiEffects	AgedFilm	N/A	1	$149
Digital Dominion	Cinematte	N/A	1	$189.95
Digital Frontiers	HVS ColorGIF	N/A	1	$99
	HVS JPEG	N/A	1	$99
	HVS WebFocus Pro	N/A	2 (bundle)	$159
Extensis	PhotoTools 2	customizable toolbar	6	$129.95
	Intellihance 3	N/A	1	$99.99
	Mask Pro	N/A	1	$299.95
Plugin Head	Filter Factory	demos, actions, gif animation and more	308	$49 (estimate)
Human Software	Squizz	N/A	1	$129
	Textissimo	presets	1	$99
	OttoPaths	N/A	1	$99
	Design Collection	tiles, images, filters for other applications	3 (all of above)	$199
MetaCreations	KPT 3.0	presets	19	$199
	Convolver	N/A	1	$129
	KPT Actions	photos	100 Actions	$49.95
Plastic Thought	Quickspace	3DMF samples	1	$129.95
RDG Tools	Ditherbox	N/A	1	$29.95
Ulead	Web Razor	GIF Animator, Photo Explorer	7 (2 imp./exp.)	$99.95

tones). Since the tools play off the paradigms found in Photoshop (the brush, lasso, smudge, and eyedropper), Magic Mask is remarkably easy to use.

Mask Pro, from Extensis, uses more of a color matching approach to masking—effectively the ruby mask concept on steroids. When you launch Mask Pro, you are taken to a wholly new interface as if you were in a standalone application. You use tools such as the Brush, Airbrush, Bucket Fill, Magic Wand, and Pen. These tools work much like those found in Photoshop except that there are "Magic" variations.

For example, the "Magic Fill" tool patches holes in selections and the "Magic Brush" uses "color matching" technology to generate the selections. Chroma Graphics also offers Chromatica, a two-filter set. ChromaColor provides the ability to replace and create palettes to and from any image; Chroma Mask offers many of the same capabilities found in Magic Mask.

Digital Dominion's Cinematte offers comprehensive blue and green screen compositing directly within Photoshop. Correction controls enable you to compensate for poorly lit blue screens with Matte Choking, Matte Blur, color fidelity Protection, and Light Color controls. Cinematte also allows you to adjust the matte transparency. There are no special effects-oriented capabilities beyond compositing. The filter is extremely straightforward and easy to grasp, especially for photographers familiar with using blue screens for compositing. High-end blue and green screen compositing within Photoshop is a snap with Cinematte.

TEXTURE-GENERATING PLUG-INS

Fortunately, designers don't survive on Web graphics and basic image editing alone. Relatively pleasant tasks such as texture generation and text effects often bring home the bacon every bit as much. MetaCreations' classic Texture Explorer, now found in KPT 3.0, opened a market for computer-generated textures that has been further propelled with Andromeda's Series 4: Techtures, Auto FX Ultimatte Texture Collection, and Xaos Tools Terrazzo.

KPT Texture Explorer's impressive texture-generation filter, while endlessly fun, creates often wildly fantastic textures. Although they are extremely versatile and original, it often can be hard to find an appropriate texture for the task at hand.

Andromeda's Series 4: Techtures Filter is a texture, bump map, and environmental effects generating plug-in. Its visually compelling interface features hundreds of preset textures, maps, and environments that can be manipulated by adjusting the lighting, opacity, colors, orientation, and much more. There are also controls for turning patterns into weaves and panels, and you can layer textures upon one another. The filter runs via preset textures that must be accessed from the CD.

The Ultimatte Texture Collection, from Auto F/X, comes with more than 1,500 seamless textures (stored on three CDs) arranged in three categories: Paper & Fabric, Stone & Metal, and Art & Organics. Unlike many seamless tile collections, these textures are extremely high quality and particularly useful for standard professional design requirements. The plug-in allows you to add lighting and color castes to the textures in addition to providing controls for adjusting the size, hue, opacity, and RGB values of the textures.

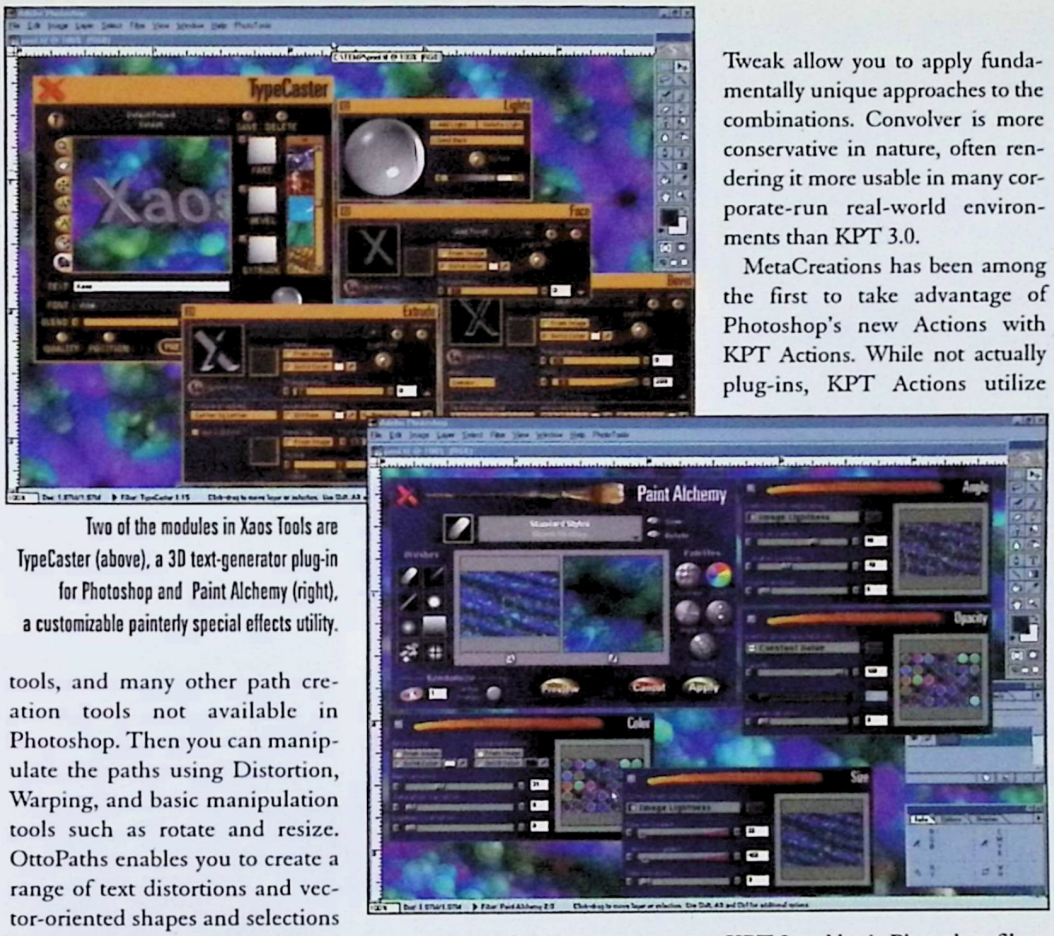
TEXT EFFECTS

Text has never looked so good in Photoshop with plug-ins like Auto F/X Typographic Edges, Human Software's Textissimo and OttoPaths, as well as Xaos Tools' TypeCaster.

Auto F/X's Typographic Edges creates edge effects on text and line art images set on layers within Photoshop using 460 preset effects stored on a CD. The plug-in filter enables you to customize the effect by scaling horizontally and vertically, just vertically, just horizontally, and with warping. Effects are applied to the transparent portions of the layer as well as the opaque portions, so it is important to make sure that the Preserve Transparency option is off in Photoshop.

Human Software's Textissimo generates fresh, compelling text effects. Users choose from dozens of text effects stored on the accompanying CD. Effects go well beyond standard embosses, drop shadows, and bevels and they can be further tuned although the lack of help files means experimentation is a must. When you enter text it becomes a path that can be edited using a powerful array of path manipulation tools.

These same path manipulation tools are the basis for Human Software's OttoPaths plug-in. With OttoPaths you can create paths from text, ellipses, pen



Two of the modules in Xaos Tools are TypeCaster (above), a 3D text-generator plug-in for Photoshop and Paint Alchemy (right), a customizable painterly special effects utility.

tools, and many other path creation tools not available in Photoshop. Then you can manipulate the paths using Distortion, Warping, and basic manipulation tools such as rotate and resize. OttoPaths enables you to create a range of text distortions and vector-oriented shapes and selections directly within Photoshop.

Human Software also has one of the best distortion effects plug-ins available: Squizz. Squizz performs distortions with one of four methods: by brushing on distortions (think Smudge on steroids), with Grids, Envelopes, and using Paths. Each method has numerous controls for adjusting the distortions and you can create movies of the distortions. The preview updates automatically, resulting in muddy response to manipulations at times, but for interactive distortions in Photoshop, Squizz is tops.

SPECIAL EFFECTS PLUG-INS

Despite the range of new plug-in filters oriented toward relatively fundamental bitmap editing requirements, special effects-oriented plug-ins still rule.

MetaCreations classic Kai's Power Tools 3.0 is arguably the filter set that fueled the Photoshop compatible plug-in set craze. While some of the filters in KPT have been abused beyond the level of ubiquity, KPT 3.0 is still among the most powerful plug-in sets available.

Along with the aforementioned Texture Explorer, the endless possibilities found within the Gradient Explorer and Spheroid Designer alone justify its purchase, even if these filters can be as valuable as are time consuming. Sixteen other filters populate KPT 3.0, including an excellent Seamless Welder, Gaussian Blurs, Noise, and Twirl. Interform, a plug-in that creates moving textures for multimedia productions, is also worthy of note.

MetaCreation's KPT Convolver is more of an all-in-one package. Convolver combines common effects, such as embosses, tinting, blurs, and sharpens in seemingly unending ways. Three different modes called Explore, Design, and Tweak allow you to apply fundamentally unique approaches to the combinations. Convolver is more conservative in nature, often rendering it more usable in many corporate-run real-world environments than KPT 3.0.

MetaCreations has been among the first to take advantage of Photoshop's new Actions with KPT Actions. While not actually plug-ins, KPT Actions utilize KPT 3 and basic Photoshop filters to create extraordinary effects. What's extraordinary is that you can actually take a look at how Photoshop's Actions work, so you can dissect KPT Actions to learn how to create create your own effects. Also, unlike plug-ins, you can easily add and remove actions. KPT Actions create rich text, button, frame, and background effects.

Alien Skin's Eye Candy is another formidable special effects package that delivers 21 filters, including Chrome, Fire, Smoke, Water Drops, and Bevels via an attractive yet intuitive interface. Each of the effects is fairly conventional with the potential to become ubiquitous. Most of the plug-ins have a wide variety of parameters and provide a wide range of variability to each effect. Alien Skin has released a customized set of filters based on these same effects for Adobe After Effects called, appropriately, Eye Candy for After Effects.

Andromeda Software, one of the first Photoshop compatible plug-in vendors, offers a wide range of special effects filters in addition to the previously mentioned Series 4 Techtures filter.

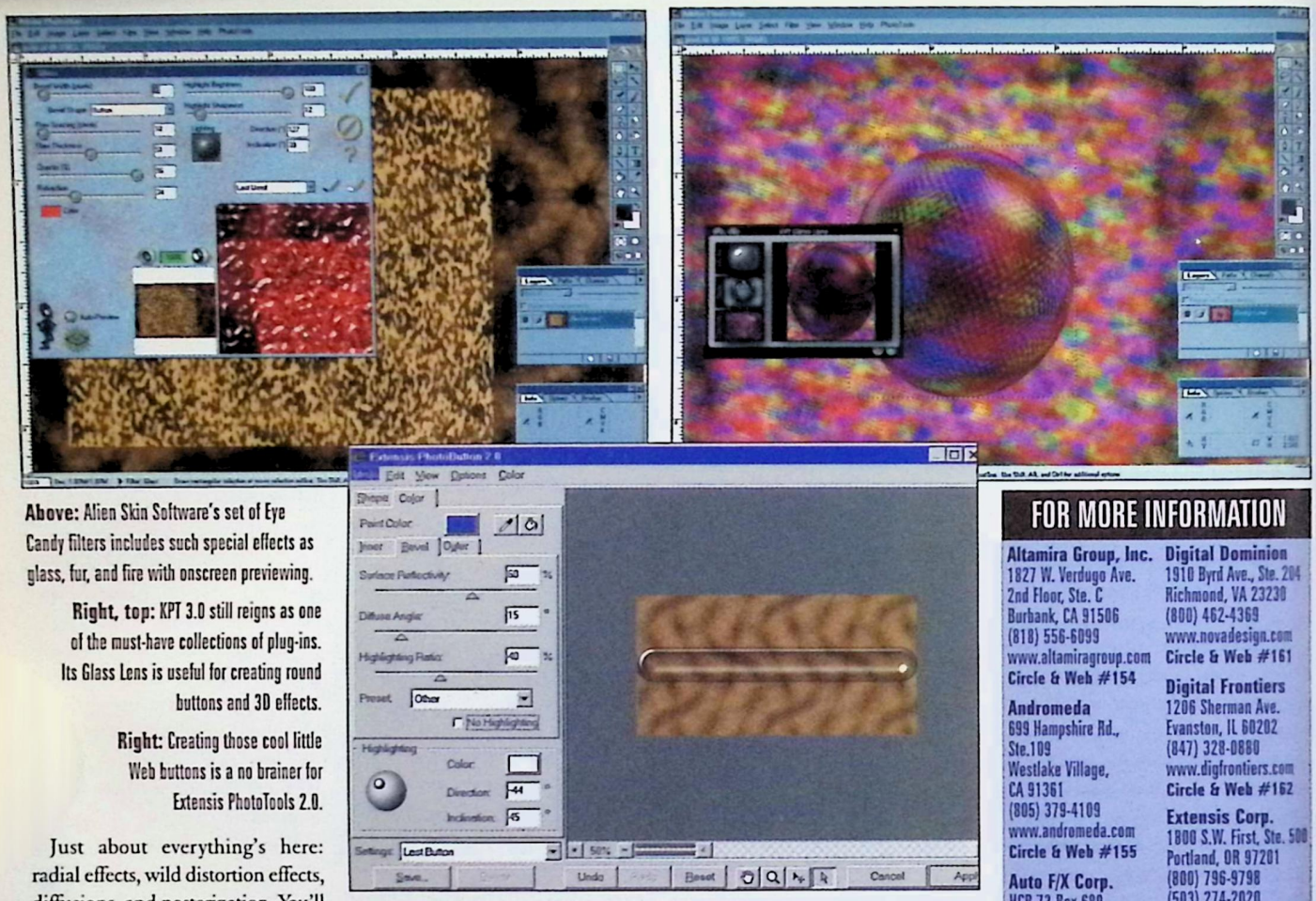
Series 1 Photography plug-ins emulate standard lens effects such as Halos, Prisms, Reflections and Diffraction effects. Series 2 3D Filter generates 3D shapes from any image using basic spheres, cylinders, boxes, or planes in any size or orientation. Series 3 Screen Filter generates a very comprehensive set of halftone screen effects including mezzotints, mezzoblends, patterns, special effects, and text effects.

Andromeda also offers an excellent motion blur filter called Velociraptor, and at press time it was about to release a new Drop Shadow filter capable of creating far more realistic shadows within Photoshop.

Another superb special effects plug-in set is Xaos Tools Total Xaos, which includes three remarkable plug-ins: Paint Alchemy, Terrazzo, and TypeCaster. Paint Alchemy uses a custom brush stroke engine to generate exceedingly attractive and unique painterly effects.

Terrazzo uses 17 tiling sizeable symmetries to create an almost infinite number of seamless tiles from any image. TypeCaster is a 3D type-rendering plug-in that enables you to render any Post-Script Type 1 or TrueType font into 3D.

The Filter Factory CD is easily the largest compilation of Photoshop-compatible plug-ins, with more than 250 filters. Filter Factory is an application that can be used to create custom filters. Filters on the Filter Factory CD range from simplistic and frivolous to wildly unique and powerful. The interface is basic, overly large, and unintuitive, but the range of possibilities is staggering.



Above: Alien Skin Software's set of Eye Candy filters includes such special effects as glass, fur, and fire with onscreen previewing.

Right, top: KPT 3.0 still reigns as one of the must-have collections of plug-ins. Its Glass Lens is useful for creating round buttons and 3D effects.

Right: Creating those cool little Web buttons is a no brainer for Extensis PhotoTools 2.0.

Just about everything's here: radial effects, wild distortion effects, diffusions, and posterization. You'll never be found wanting for an uncommon effect.

Extensis PhotoTools has made its way to the Windows platform with version 2.0. PhotoTools offers six plug-ins in addition to a series of shortcut toolbars for common tasks.

While the list of effects such as Glows, Buttons, and Embosses may sound unexciting, each provides a compelling depth of capability. For example, the Text tool enables you to perform kerning and tracking. Unlike most plug-in filter previews, PhotoTools enables you to see all of the layers from the Photoshop file rather than just the one you are working on.

Auto F/X offers several other filters in addition to those already mentioned, namely Photo/Graphic Edges, Page Edges, and Photo/Graphic Patterns. Photo/Graphic Edges and Page Edges both use numerous border masks stored on a CD to create border effects.

Each plug-in allows you to edit a border effect with controls for lighting, softness, color, opacity, and more. The Photo/Graphic Patterns plug-in adds texture to images from hundreds of seamless textures.

You have complete command over how the texture is applied to your image with controls for grain, depth, colorize, displacement, hue, opacity and much more.

Last but not least, DigiEffects AgedFilm generates the effect of aged film complete with dust, scratches, tracking, jitter, and flicker controls. There are plenty of controls to vary the effect, including Dust, Hair, and Tint color controls and controls that allow you to adjust the probability of the flaws in the film effect.

Unfortunately, you cannot save settings and you can only apply the effect to the background layer in Photoshop.

Whether you need to batch process hundreds of graphics for the Web or come up with a fresh effect for that hard-to-please client, Photoshop-compatible plug-ins offer an ever increasing way to extend the capabilities of most major bitmap editing packages.

With so many plug-ins, it's easy to spend more money on plug-ins than on the main bitmap application itself. But then saving time, increasing productivity, and having a little fun in the process ought to be worth something, too.

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Ulead Systems, Inc
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Torrance, CA 90502
(800) 858-5323
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Circle & Web #167

Eye Candy 3.0 is the answer to Photoshop ® users' prayers. In seconds these filters create effects normally requiring hours of tweaking. Fur, Smoke, Fire, and Squint simulate natural phenomena better and more quickly than most users can by hand. Professionals love Eye Candy because it makes commonly needed effects like bevels and drop shadows in one click. Amateurs love it because it makes them look like pros.

* Also works with JASC Paint Shop Pro 4.12, Corel Photo-Paint 7.467 or Photo Paint Plus 7.663.

Now there's Eye Candy 3.0 for After Effects. After Effects ® users will find Eye Candy's 19 unique effects invaluable for any project. The set includes incomparable texture, distortion, and production effects, as well as specialized effects such as Fire, Smoke, and Chrome. Eye Candy's effects automatically adapt to and/or modify layer opacity information. Furthermore, new parameters give users command over every aspect of the effects.

Eye Candy 3.0 and Eye Candy 3.0 for After Effects are available through software resellers and directly from Alien Skin Software. For examples, movies, and to order Eye Candy 3.0 or Eye Candy 3.0 for After Effects, visit our website at:

WWW.ALIENSKIN.COM

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THE EXPERTS TEST AND REPORT ON GRAPHICS AND VIDEO SOFTWARE AND HARDWARE

REVIEWS

- FujiFilm DS-300 Digital Camera
- Hewlett-Packard Kayak XW Workstation
- Videonics Video Toolkit 3.0

The PC Graphics & Video Rating System

Each product is given a score out of 10. It is also given a classification from one of the three following categories:

Highly Recommended
This product performs significantly better overall than other products against which it competes.

Recommended
This product is a useful valuable tool, meeting or exceeding its manufacturer's claims, and is without any significant flaws.

Not Recommended
This product is not recommended for general use but a single feature or very low price might be attractive to some readers.

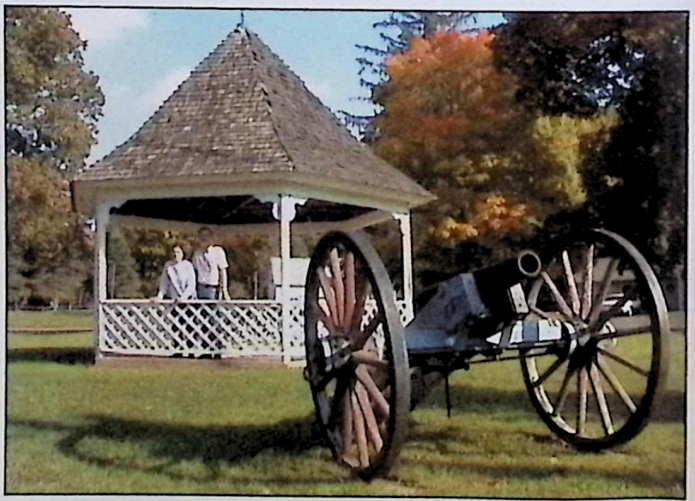
FujiFilm DS-300 Digital Camera

by Don Sutherland

PROFESSIONAL CONTROL

While most of the headlines about digital still cameras describe "under-$1,000" models, low prices mean something necessarily was left out. This "something" could be described as "professionalism," or full professional control over the image-making process. The FujiFilm DS-300 goes the extra distance with numerous features extending its range of use, and its abilities to get shots just right. The camera, like its lower-priced cousins, can be operated with the same ease as auto-everything, point-and-shoot film models.

But when automation isn't enough, it can be switched into semi-automatic and manual modes, whose operation continue to be simple—but can be fine-tuned with the care and control that distinguish "photographs" from "snapshots."



Believe it or not, this is the kind of shot digital cameras hate. Exposure latitude is extensive, from direct sunlight on grass and gazebo, to the humble, reflected glow of the gazebo's rafters. The DS-300 did all right by these, but it treated the black cannon barrel the way most digital cameras would—underexposed. The black comes out splotchy in the original, with spots of random color or noise (which sometimes disappears on the printing press). Perhaps the unsuspecting could pass it off as rust? Background figures are soft because the wide-angle lens makes them extra-small, and because focus was set for the foreground object, using the hub of the wheel. (Photograph © 1997 by Don Sutherland.)

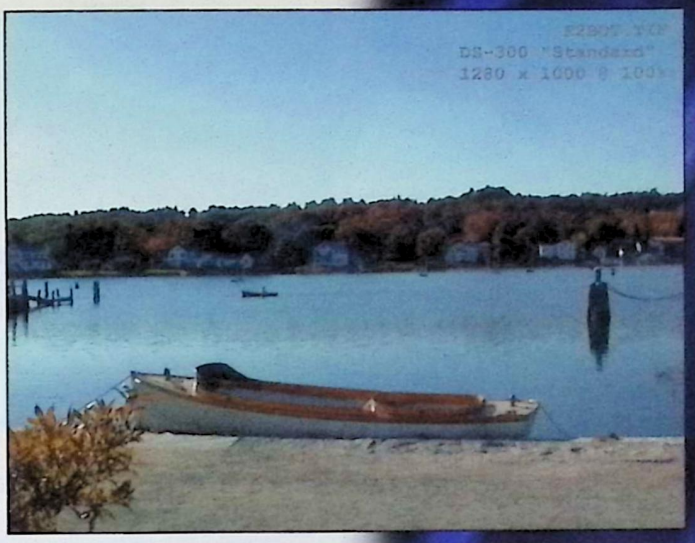
NOBLE LINEAGE

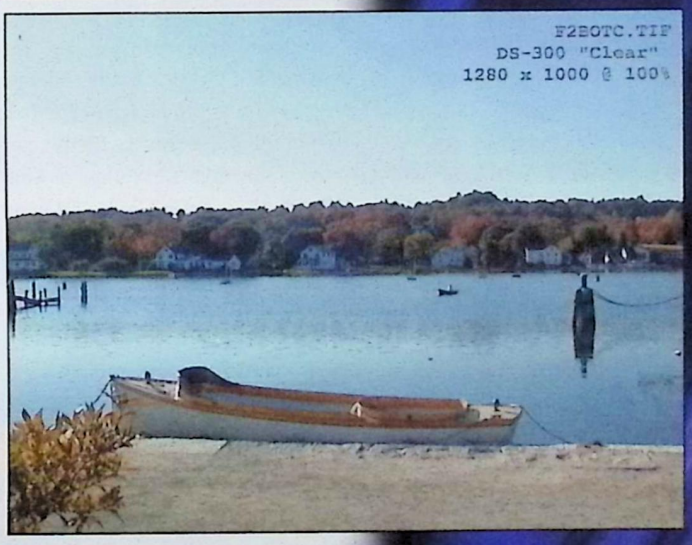
The DS-300's first claim to professionalism is its use of the same

CCD as its older, bigger brother, the Fujix DS-515 (also marketed as the Nikon E2n). That camera, priced around $15,000 when it first appeared, is a full-fledged Nikon SLR whose body echoes the F4, and which accepts most Nikon lenses. In the DS-300, that same digital imager (producing an image 1200 x 1000 pixels in size) is installed in an all-new easycam.

It has a permanently installed lens, (f3.5 to 5.6, 9.2 to 25.8mm) with a zoom range that goes from medium wide-angle ("equivalent" to 35mm on a 35mm camera) to a modest telephoto (105mm "equivalent"). Instead of a through-the-lens viewfinder, the framing of the DS-300 is accomplished through a separate-window viewfinder. The spec sheet tells us the viewfinder shows 80 percent of the image. This is reminiscent of the video "safe action" area familiar to those who shoot for the screen, and the same rules of use may apply.

Even though housed in a different body, the presence of the "same" CCD raised an intriguing question: Does this Fuji perform as well, better, or worse than its pricier relative? My first tests included placing the DS-300 and a DS-515 side-by-side to shoot the same pictures.





The same scene twice, once in "Standard" mode (above) and once using the DS-300's "Clear" mode (below), with plenty of detail near and far to work on.

"Ideal for photographs of objects such as cars or buildings," the manual tells us. "Not suitable for pictures of people or scenery." By those rules, this shot would be a bit of a hybrid—not many people, but plenty of scenery.

On my screen, and in prints by a photo-quality inkjet printer, improvements in "Clear" mode are readily apparent in the edges of the boat in foreground and the houses in background—we'll see how these distinctions fare through the CMYK magazine printing process.

Foliage in background, although presumably "scenery," is also crispened for the better in the "Clear" shot. The sole person in the shot, rowing the boat, is equally a washout in both versions—simply too small in the frame to occupy more than a few blob-like pixels, given a white fringe on the left by camera software.

(Photographs © 1997 by Don Sutherland.)

The test may have been a little biased, because the DS-515 I used for comparison was an early model; I don't know if there have been firmware revisions.

However, based upon those possibly imperfect comparisons, I would say that the image quality of the Fuji DS-300 is the equal of the more elaborate DS-515. Direct comparisons show nearly identical edge sharpness and detail resolution, and contrast was a close match, too.

I noticed some changes in color, however, with the DS-300 showing a bit richer color saturation. Such issues are easily adjusted in Photoshop.

Less easy to fix after-the-fact are things like picture resolution, and in this regard the DS-300 appears the equal of Fuji's pricier SLR.

All this good news still doesn't define the DS-300. You can put identical films in point-and-shoot and F4 cameras, too, but that's not what determines how you use them. What can you do with the DS-300?

EDITING IN-CAMERA

An unusual amount of pre-editing can be done in-camera, at the user's discretion, as though its designers wanted it independent of computers in the field. Several things that might ordinarily be relegated to an image-editing session can be done on the original image by the DS-300.

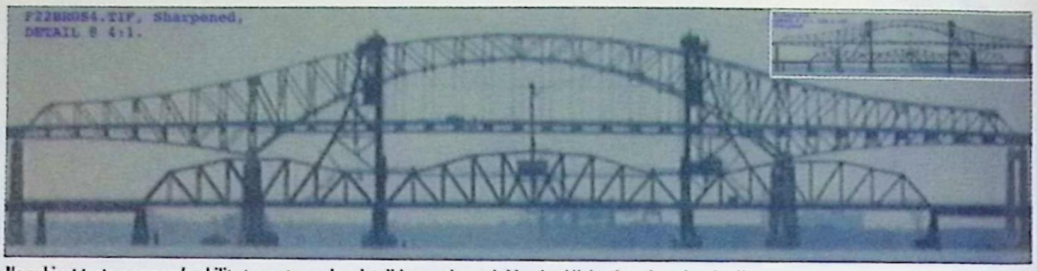
Included in this roster is a "digital telephoto" mode that claims the effect of digitally doubling the focal length of the zoom lens. What it does, in fact, is crop to the central 640 x 480 pixels of the image. This puts a tighter frame around the subject, which indeed simulates a telephoto effect. It saves storage space in camera RAM, too, and

SUMMARY

Fuji DS-300 Digital Camera
Fuji Photo Film
555 Taxter Rd.
Elmsford, NY 10523
(800) 378-3854 • $2,300
www.fujifilm.com
Circle 6 Web #199

FujiFilm DS-300 Digital Camera is an intermediate camera with point-and-shoot simplicity, plus a full range of professional controls. High-image quality and a number of unique features offer a wide range of high-end photographic apps.

Rating: 9/10



No subject tests a camera's ability to capture edge-detail better than a bridge backlighted against the sky. Here are two, compressed together by the optical effects of a telephoto lens. At 1:1 size, the edges are well-defined, crisp. Even when I enlarged the image to 400 percent—more than I recommend for any digital camera—the DS-300 reproduced this scene better than most digicams. (Photograph © 1997 by Don Sutherland.)

gives the photographer a measure of control over how the finished shot will look. But its look, in comparison tests, closely matches the same subject photographed at the full 1280 x 1000, and cropped to the same 640 x 480.

In a similar way, the DS-300 has two general photographic modes, "Standard" and "Clear," which can be selected for each image. The "Clear" setting creates an image that looks pretty much like the same scene shot in "Standard" mode, then sharpened in Photoshop.

Both the "Digital Tele" and the "Clear" modes could be valuable for anyone working in the field, delivering photos to recipients who lack the time, the skill, or the inclination to perfect the images after they arrive.

UNILATERAL ENDOWMENTS

Other features of the DS-300 are applied more unilaterally to all its output. In addition to three modes of automatic exposure (Programmed, Aperture-Priority, and Shutter-Speed Priority), a full Manual exposure control can be invoked.

Although the auto-exposure systems of most cameras these days are remarkably accurate, there remain many conditions when the ambitious photographer wants to adjust for particular attributes of the shot.

No digital camera this side of the SLRs provides such extensive control on this score as the DS-300.

Like most digicams, the DS-300 has three "quality" settings based upon the amount of compression for each shot. Like only a few, it also has an "uncompressed" setting. Uncompressed files are written as TIFFs (all the others are JPEGs), which has slightly different characteristics (to reduce file size, Fuji tells us) than the TIFF as it's known to Photoshop.

Opening the Fuji TIFF file requires Fuji software by the name of SD-D5. All other files of the DS-300 can be opened either through Fuji software, or directly in your favorite image editor using the quickest form of download: the card-reader method.

The camera uses ATA flash cards for RAM, a 15MB version being standard issue. The camera's card slot accommodates Type II media, including the smaller Smart Cards with an adapter.

Nominal light-sensitivity is rated at ISO 100, though it can also be increased by two stops to ISO 400. My test results revealed a very slight increase in "noise" (grain) at the higher speed, but not enough to worry about when exposure conditions warrant the increase.

DOUBLE AF SYSTEM

More than any other digital camera I have tested to date, the DS-300 has an accurate and agreeable autofocus system. This is because of two AF rangefinders, including an active infrared system for use at the closer (and most critical) distances.

Because it literally projects upon the subject, it is much less dependent on the high-contrast and bright lighting than the passive AF systems of most other digicams.

A passive system constitutes the DS-300's second rangefinder, for use across greater distances than the IR can reach. Using the camera's built-in flash (it also has a hot-shoe contact) I've been able to shoot at close ranges (about 10 feet), where the light was too dim to see. The rangefinder consistently locked on target.

Nobody expects an on-camera flash to produce masterful tabletop lighting, but this portrait of a late-1880s typewriter would probably do for a catalog. A quick identification snap was the original intention; here is the machine perched upon a bookcase with a bedsheet for a background. The flash on the DS-300 is above the lens, causing shadows behind subjects to be cast down toward the floor. Those few in sight in the original of this shot were easy enough to cut away, along with the bedsheet. Contained within only about 750 x 450 pixels in the original frame, the image captures enough detail to reveal the contours of the iron casting and the chips and nicks of time on the relic. (Courtesy Dennis Clark. Photograph © 1997 by Don Sutherland.)

An optional Extension Unit gives the camera "motordrive" capabilities (and screws to the camera base, like a film motordrive), buffering a maximum of 12 frames captured at 4.5fps.

The DS-300 does not have an LCD monitor, meaning it lacks an integral method for reviewing shots already photographed. It does, however, include an NTSC out jack, enabling the recorded shots to be screened on a TV monitor. The TV screen can be viewed "live" when the camera's lens is set in "macro" mode.

Fitted with many other refinements, the DS-300 is a point-and-shoot camera whose output equals the quality of pricier digital SLRs, packaged with features that provide the adaptability for professional-level photography. This is a unique combination in the present evolution of digital cameras, and for many applications, nothing less will do. PCGV

Contributing editor Don Sutherland operates Sutherland Multimedia (Staten Island, NY). He is the author of several books and has been writing about imaging since 1967.

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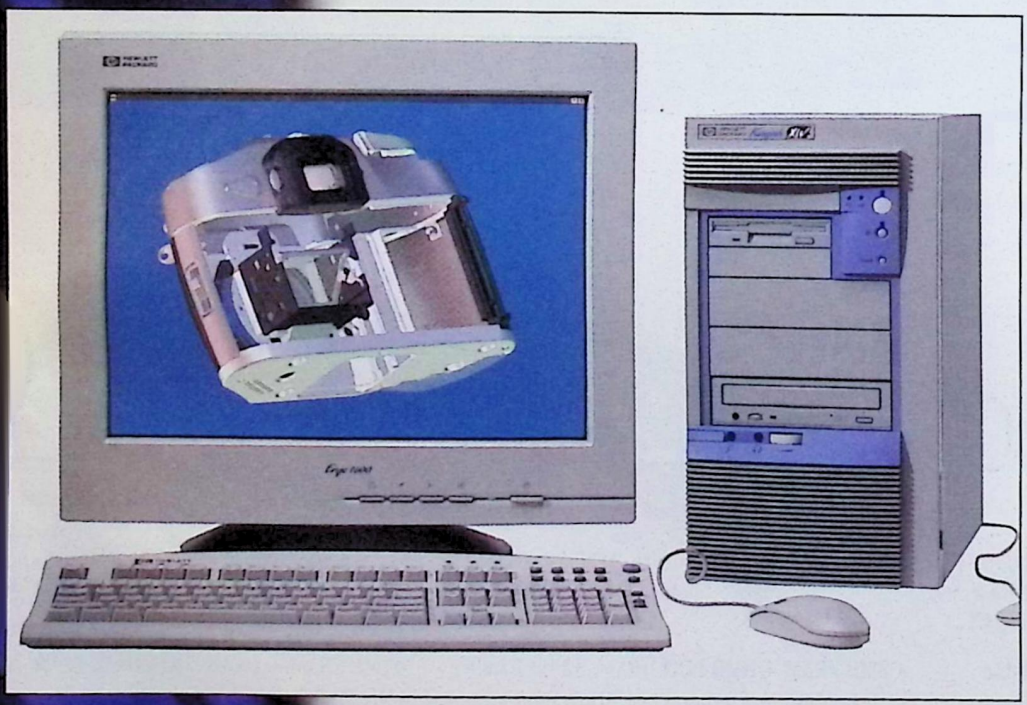
HP KAYAK
Designed for Heavy-Duty Production

by Stan Miastkowski

NT workstations are hot, no doubt about it. And as the demand for high-performance NT-based systems has grown, all the major PC makers have started to offer them. But too many companies play fast and loose with the term "workstation," often simply taking an off-the-shelf PC, adding a fast processor, oodles of RAM, a SCSI hard disk, and a high-end graphics card.



The Kayak comes in three different lines: the XA, XU, and XW, with prices starting at $8,379.

But Hewlett-Packard, long known for innovative design and overall quality, has taken a completely different tack in its new line of Kayak workstations. The Kayak was designed from the ground up for maximum performance, using cutting-edge technology and state-of-the-art components. The result is a workstation that offers unmatched performance and reliability.

The Kayak comes in three different lines: the XA, XU, and XW, with prices starting as low as $8,379. I looked at the top of the line, a loaded XW with a list price of $17,759. That price tag may be eyebrow-raising, but the unit I tested delivered amazing performance, equal or better to Unix-based workstations costing much more.

The Kayak I tested had dual 300 MHz Pentium II processors, 128MB RAM, dual 4.5GB Seagate Cheetah 10,000rpm Ultra SCSI hard drives using Adaptec's RAIDport hardware striping controller, a 10/100 Ethernet card, and a 24X EIDE CD-ROM drive. Other lower-priced models of the XW are available with single processors (266 or 300MHz), single hard drives, less RAM, and different graphics cards.

3D to the Max

The centerpiece of graphics workstation performance, of course, is the graphics card. My review unit included HP's new proprietary VISUALIZE fx4 OpenGL graphics card.

The card, which is the first high-performance graphics card available for the new AGP (Accelerated Graphics Port) bus, has as its heart a geometry engine that uses two HP RISC-based floating-point processors running in parallel at 156MHz. They perform the transformation, lighting, and setup calculations on the OpenGL geometry pipeline. HP claims that they're the fastest geometry accelerator chips in the world.

The card's rasterizer uses dedicated ASICs running at 100MHz. Also working in parallel, they take

SUMMARY

HP Kayak XW PC Workstation
Hewlett-Packard Co.
3000 Hanover St.
Palo Alto, CA 94304
(800) 322-4772 • $17,759
www.hp.com
Circle 6 Web #198

The Kayak XW is a no-compromise, ultra-high performance NT workstation designed for full-time production use. Considerably more than an off-the-shelf PC beefed up with more hardware, HP designed it from scratch, and it represents the state of the art in PC design.

Rating: 9/10

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the output of the geometry engine and convert it to bitmaps, as well as controlling the frame buffer. A texture-mapping daughterboard is optional, but was installed in the unit I reviewed. It uses 16MB of SDRAM for texture memory and a dedicated processor to accelerate texture mapping.

Besides the 16MB of RAM for texture mapping, the VISUALIZE has 18MB of main memory, supporting True Color (24-bit) resolutions of up to 1600 x 1200, and can generate a monitor refresh rate of up to an incredible 202Hz. In the vernacular, there's only one word to describe the board's capabilities: Awesome.

Although I wasn't able to run any formal OpenGL benchmarks, subjective performance of the VISUALIZE fx4 is just plain amazing. HP's tests show that the Kayak XW with the VISUALIZE fx4 is the first standard workstation to break 100 in the industry standard ViewPerf OpenGL benchmark. By way of comparison, a $120,000 Silicon Graphics Onyx2 Reality DS R10000 scores 93 on ViewPerf; the Compaq Professional Workstation 6000 scores 37.

Kayak Options

If your budget is a bit smaller and your speed needs aren't as extensive, the Kayak XW is also available with the AccelECLIPSE graphics subsystem (a PCI card) with Evans & Sutherland's REAL image chipset. It's about a quarter the performance of the VISUALIZE fx4 in 3D benchmarks, but certainly no slouch when compared to off-the-shelf PC graphics cards in low-end workstations. The Kayak XW with the AccelECLIPSE starts at the considerably lower price of $8,379.

Although the Kayak XW is aimed at 3D applications, I tested its 2D performance using the *PC Graphics & Video* benchmarks. I wasn't able to run the multithreading test because the XW is so fast that it was impossible to switch between two running applications before the first was finished with its processing. But the other benchmarks (see the chart) showed excellent performance in Ulead MediaStudio Pro 5.0 and astonishing performance in Adobe Photoshop benchmarks.

Under the Hood

There's a lot more than fast graphics cards, striped hard disks, and dual processors to the Kayak. The system's motherboard and BIOS are unique in their hardware features and monitoring capabilities. All the components—especially the processors and the high-performance hard disks—generate a tremendous amount of heat. A group of temperature sensors monitor critical areas and also control four variable-speed fans inside the case.

The BIOS also monitors critical system voltages, and will even shut down the XW if something goes wrong. All these parameters, as well as others such as hard drive status and security features, are monitored by HP TopTools software, which will alert you if someone opens the XW case. TopTools has been available for HP PCs for several years, but it's reached a new level of capabilities in conjunction with all the hardware monitoring capabilities built into the XW. TopTools is optimized for networked environments, and is basically designed for central monitoring by a system administrator, but you can also use it if your system is stand-alone.

The Kayak's case is built like the proverbial tank, and you can open it and disassemble all the components without having to use any tools. (There is, of course, a case keylock as well.) It's crowded inside, and heavily built with carefully thought out features such as ducts for directing airflow from the four fans as well as special trayless drive bays that are extra rigid to accommodate the increased vibration of the 10,000 rpm drives. Despite all the noise-producing components, the Kayak is an extremely quiet machine, considerably quieter than most off-the-shelf PCs.

Rounding out the Kayak's hardware are a built-in sound card (there are even headphone and microphone jacks on the front panel, and a joystick/MIDI connector on the back), plus the usual array of ports, including a pair of USB (Universal Serial Bus) connectors for the new generations of peripherals.

There's also an external SCSI port. On the software side, the Kayak XW comes with Windows NT Workstation 4.0, Netscape Communicator 4.0, McAfee VirusScan and WebScan, Autodesk Whip! Plug-in, and HP TopTools 2.1. The Kayak also comes with a three-year warranty, with the addition of free onsite support for the first year.

The Bottom Line

It's extremely difficult to avoid using superlatives when talking about the Kayak XW.

Especially when equipped with the top-of-the-line VISUALIZE fx4 card, it sets a new standard for NT workstation performance. And while the high-end Kayak's $17,759 price tag is a substantial piece of change, it easily competes with six-figure, high-end Unix workstations.

If you work with graphics all day, every day, the Kayak XW is the type of investment that can pay for itself in increased productivity. PCGV

Contributing editor Stan Miastkowski has been covering the computer revolution for the past 20 years from his cyberbase in the New Hampshire woods. He can be reached at stanm@monad.net.

PCGV BENCHMARKS FOR HP KAYAK XW WORKSTATION

Reference System: Pentium 166 MHz processor, 128MB RAM, Adaptec 2940 Ultra SCSI controller, IBM 4.5GB UltraStar SCSI hard disk, Matrox Millenium graphics card with 4MB WRAM, Windows NT Workstation 4.0.

TASKS	HP Kayak XW	Reference
Ulead Media Studio Pro 5.0		
Time to launch	:09	:28
Generate Preview	1:47	5:26
File Creation	5:38	38:51
Adobe Photoshop 4.01		
Small Image Launch (2MB)	:06	:19
Large Image Launch (18.5MB)	:08	:25
Small Image Rotate	:03	:22
Large Image Rotate	:07	1:23
Small Image Blur	:02	:12
Large Image Blur	:05	:47

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Circle 6 Web # 232

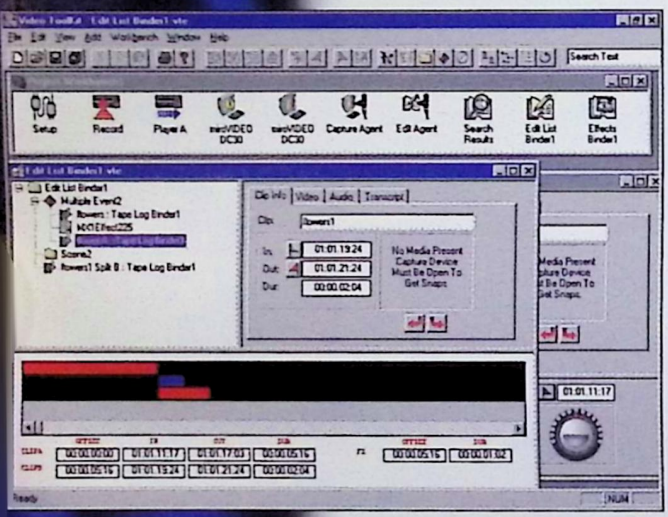
VIDEO TOOLKIT 3.0

Videonics' Powerful Edit Controller

by Paulo de Andrade

During the past couple of years, most of the media attention has been focused on non-linear video editing systems. It's true that those systems offer lots of possibilities and are definitely going to be the future of video editing. Today's reality, however, is that the vast majority of video editing is still done on linear systems. There are a variety of reasons for this.

First, setting up a linear suite is a lot easier than a non-linear one.



In this typical Video Toolkit screen we can see the Edit List Binder at the bottom. Notice that each clip contains edit point information as well as duration. The red and blue bars in the timeline indicate two video clips with a transition in between. You can drag the bar extremities to adjust timing. If you desire, you may replace the timeline with a CMX-style edit list.

Second, most facilities already have linear equipment and can't justify the non-linear upgrade expenses. Third, training someone on a linear system is a lot simpler than on a non-linear one. Fourth, linear editing is a lot less expensive, as a 90-minute broadcast tape such as MII or Betacam SP costs less than $60. The equivalent hard drive space costs several thousand dollars. Fifth, non-linear editing is a lot more time consuming than linear. You have to first digitize all the footage and then render all transitions and the final program. On a linear system you stick the tape in the deck and edit the program in real time.

And, to cut the list short, non-linear editing of long format programs is a major hassle unless you have a lot of money to spend in memory and hard drives.

Typically what happens is that non-linear editors end up doing a section of the program at a time, defeating some of the advantages of the process.

So, what has happened during the non-linear craze to support the vast linear market? Videonics, a company known for many innovative and affordable video products, certainly hasn't stood still. Using the availability and power of computers coupled with a proprietary video networking system, it has created the Video Toolkit, probably the most powerful edit controller ever for the price.

An edit controller is the heart of a videotape editing system. It not only controls the VTRs to perform the edits, but also can control a switcher or other related device.

Videonics' other edit controller, the stand-alone Edit Suite, costs around $700 and was introduced a couple of years ago. It is a very nice unit, but suffers from a tiny screen to display operations.

Many users have asked for a way to use a video monitor to display their edit decision lists. Well, the Video Toolkit goes a step beyond and uses a 386 or larger PC running Windows 95 or NT 4.0 to display the list and take care of all the editing operations.

Better yet, it includes several functions not found in the Edit Suite for an extremely reasonable $279 price. It's better, faster, cheaper, and easier to upgrade.

Although priced like a consumer editing toy, Videonics' Video Toolkit is a serious tool. It includes features usually only found in very expensive professional edit controllers, such as CMX and Media 100 edit decision list import/export and timecode support (RC, LTC, and VITC).

It also supports all major edit control protocols (Control-L, Panasonic 5-pin, RS-422, RS-232, Control-S, and infrared), which means that you can use it to control virtually any type of VTR, from consumer models to broadcast decks. Plus, it uses GPI to trigger any compatible device such as a switcher or DVE.

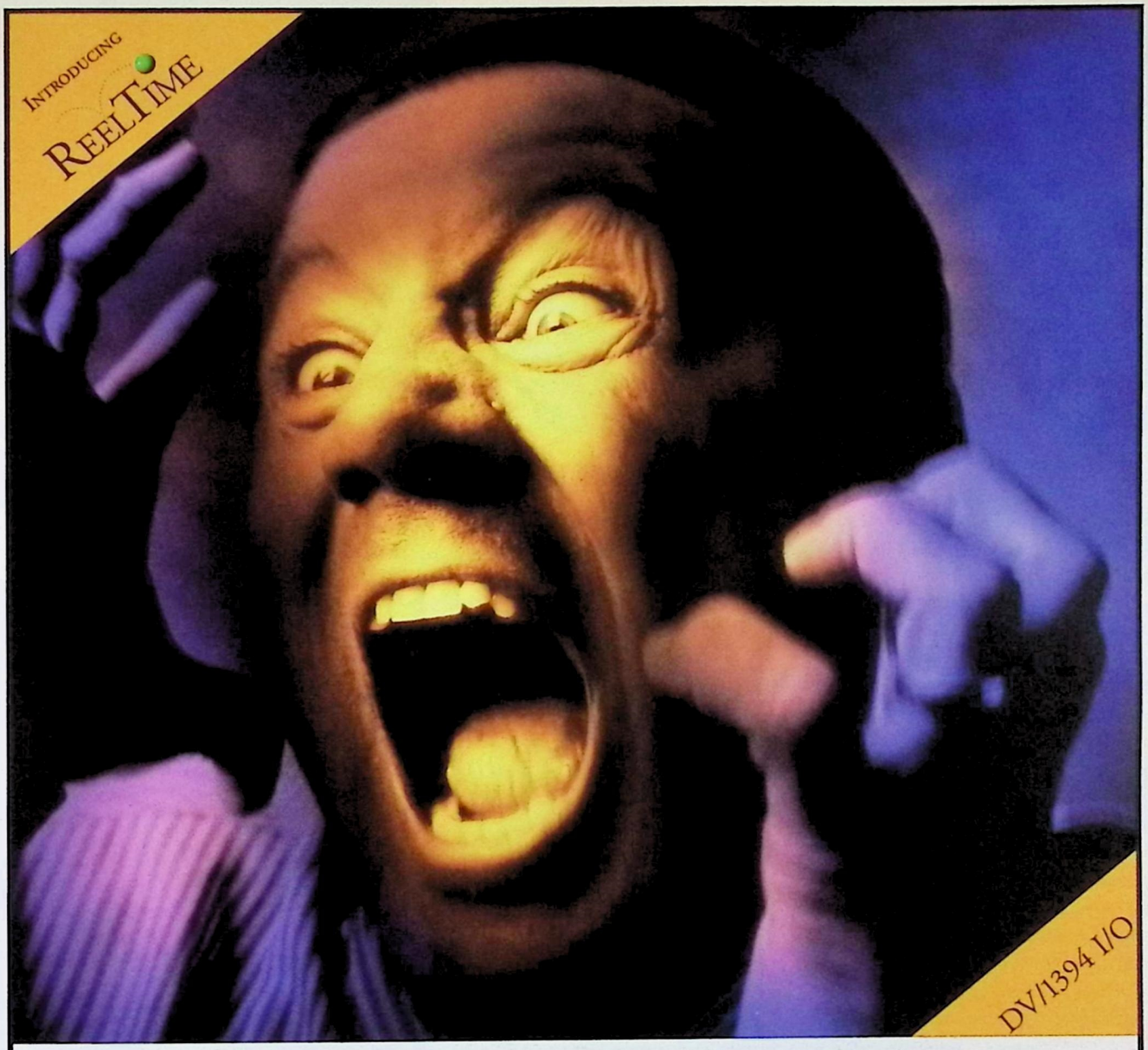
When you first open the box, you'll find a manual with a CD-ROM, one A/V Net module, one dual Control-L cable, and one dual GPI/Infrared/Control-S software-selectable cable, plus a cable to

SUMMARY

Video Toolkit 3.0
Videonics, Inc.
1370 Dell Ave.
Campbell, CA 95008
(408) 866-8300 • $279
www.videonics.com
Circle 6 Web #197

Videonics Video Toolkit is an affordable and easy to use A/B roll edit controller for tape-based systems that packs a few extra features usually found only on separate programs. It can work with all types of VTRs, from consumer models to broadcast units, and supports several types of timecode.

Rating: 8/10



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Circle & Web # 233

control the A/V Net module to your computer's serial port. If you need different types of cable or extra ones and other A/V Net modules, you can purchase them separately.

By adding cables and modules, Video Toolkit is able to control up to seven video devices, including VTRs, camcorders, and GPI triggered units.

The manual is full of illustrations and is designed to guide you carefully through all necessary steps of setting up the equipment and starting to edit. It even includes explanations on what kind of cable is necessary for your particular setup.

Besides being an A/B roll edit controller, Video Toolkit has a few functions that are usually performed by separate programs.

A built-in label printing function enables you to use a regular printer to print videocassette labels for your tapes. This is a cool feature that enables any videographer to deliver an edited and professionally labeled tape to clients without leaving the program. A set of templates is included to make the job even easier.

Another interesting function enables you to create storyboards in HTML format using the edit list. The storyboard may then be posted on an Internet home page or an intranet for client approval.

The program even takes care of including your company's logo and copyright information in the storyboard pages. I think this is a great idea, especially in the age of telecommuting, because it lets your clients review the chosen clips in the right order without forcing a trip to your facility. An email is all that it takes to guarantee the approval.

Because the Video Toolkit can capture images from video if you have an MCI-compliant capture card, these Web pages will include links to all the pictures stored in your computer. This image-capturing capability also really comes in handy when creating a tape log.

This feature alone is well worth the price of the package, if you use timecode, as there are dedicated logging programs that cost several hundred dollars and do nothing else. Logging shots is an extremely simple process. You just use the built-in remote to position your tape and click on colored flag icons to mark the in and out points. The Videonics software automatically loads the current tape address into the proper window and once you have set the in and out points, it gives you the clip duration.

If you have a capture card, you can capture video snapshots at the click of an icon, giving you a visual reference for your shot. You can type individual shot descriptions for video, audio, and transcript, making it easy to identify a shot at any time. If you have any doubts concerning a logged shot, just right-click on the timecode filed and the controller will take you to that location on the tape.

There's even a handy search function that really speeds up the process of looking for specific shots while editing. Let's say you are looking for a sailboat shot. Just enter the word sailboat and the program will list all the pertinent shots.

Logging sure saves a lot of editing time by enabling you to preselect the good takes and ignore the bad ones. And since the Video Toolkit doesn't necessarily need timecode (a must if you can afford it), you can log tapes from any kind of VTR as long as you zero your counter at the beginning and use the calibration functions.

If you have an MCI-compliant audio/video capture card, you may also capture movies from each logged clip. These movies may be used in multimedia applications or by a non-linear editing program.

Editing with the Video Toolkit is almost like using a non-linear editor: You drag your clips into the timeline, and position them in the desired order.

Once your timeline is ready, including transitions and titles triggered by GPI, you can preview your whole production or assemble the whole program to tape.

If your switcher is a Videonics MX1, the Video Toolkit lets you choose the desired transition by displaying icons representing the MX1's effects on screen.

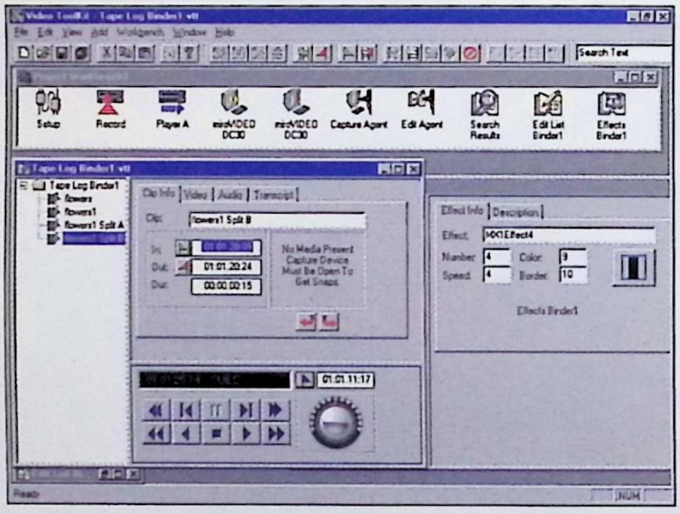
Setting up the Video Toolkit was very straightforward. All I had to do was load the software, hook the A/V Net to the serial port and connect it to my MII VTRs via RS-422 cables. In the setup menu I selected the proper cables and protocol and the software was ready to control my decks.

The virtual remote control worked perfectly, giving me a lot more precision than I expected from a mouse, especially since I am used to an edit controller with a very responsive jog/shuttle wheel. If you prefer to use the keyboard, it controls the VTR transports, too.

I was pleasantly surprised by the fact that Video Toolkit controlled my decks with absolute precision right away.

I once reviewed a very expensive edit controller and it took several calls to tech support and a lot of configuring to get it to respond well.

While the Video Toolkit cannot replace some of the more expensive edit controllers, as it lacks slow motion control and similarly advanced functions (which also require specialized equipment), it is more than adequate for most editing situations. The very reasonable price, ease of operation and broad range of features will surely make the Video Toolkit a very welcome addition to most editors' linear suites. PCGV



The tape log binder window lets you control the VTR and easily mark in and out points, while adding shot descriptions. You can set a log for each tape for ease of operation. On the right we can see part of the effects binder containing one Videonics MX1 switcher transition.

Paulo de Andrade is president of Digital Reality, a TV production and animation company in the Seattle, WA, area. He can be contacted at digitalreality@compuserve.com.

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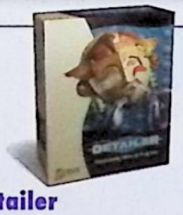

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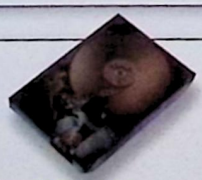

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IN FOCUS

edited by John B. Virata

Digital cameras and peripherals

- Panasonic PV-DC1080
- Umax PhotoRun
- Sony/PictureVision Collaborate
- Sharp VE-LC2

PANASONIC SHIPS CREDIT CARD-SIZED DIGITAL CAMERA

Panasonic has released the PV-DC1080, the newest member of its "PalmCam" family of digital still and video cameras.

The PV-DC1080 is a digital still camera that sports a 1.8-inch active matrix LCD color screen and a 2MB CompactFlash memory card, enabling you to store up to 85 320 x 240-pixel images before downloading to a PC. Other features include an optical viewfinder, automatic white balance, detachable electronic flash, a macro function for shooting close subjects, and a 2X zoom. It stores 24 640 x 480-pixel images in the standard JPEG file format. The camera uses a 350,000-pixel CCD, 5.7mm lens (55mm SLR lens equivalent), a fixed aperture of f3.8, and a shutter speed from 1/10 to 1/20,000 of a second. The

Contact Panasonic, One Panasonic Way, Secaucus, NJ 07094, (800) 211-7262, www.panasonic.com.

Circle 6 Web #193

UMAX PHOTORUN SHIPS WITH WATER- AND WEATHERPROOF HOUSING

Umax is shipping the PhotoRun, a pocket-sized digital still camera that includes the "Aquapac" waterproof camera case that protects the camera from rain, snow, and sand, and enables you to shoot pictures under water.

The camera ships with a 2MB CompactFlash card that enables you to store 15 photos, and is compatible with 4, 6, 8, 10, and 15MB CompactFlash memory cards. It features a 1/5-inch, 250,000-pixel CCD, and an equivalent f2.8 aperture.

It stores images in 320 x 240 and 504 x 378-pixel resolutions. It includes a PCMCIA socket adapter for connecting to a notebook computer or a CompactFlash drive.

Bundled software includes Adobe PhotoDeluxe and Presto! PhotoAlbum software. It is priced at $229 for the notebook bundle and $279 for the desktop bundle. Contact Umax Technologies, Inc., 3561 Gateway Blvd., Fremont, CA 94538, (510) 651-4000, www.umax.com.

Circle 6 Web #192

Your Eye's on It

The VGA Culture

by Don Sutherland

Remember when VGA described video cards and monitors? Now it describes cameras, too. One that produces an image of 640 x 480 pixels with 24-bit color, is designated "VGA quality." The picture's named, in our world of shorthand, "a 6 x 4."

Next up the etymological scale are "XGA-quality cameras," with 1024 x 768 pixels, also sometimes abbreviated as "10 x 7s."

When a group of people coins its own argot, voicing jargon as though understood by everyone, can secret handshakes be far behind? For the evolution of slang is a sign that a new culture is breeding.

In the Petri dish of PC graphics, the culture's spreading fast. Perhaps it was only natural that Epson and HP went into the digicam business as a way, ultimately, to sell more printers and papers and inks. Only natural, too, that "Intel Inside" could be a boost to cameras (see last issue's column) built by OEMs around the company's 971 PC Camera kit.

Besides the giants, players like Altima and Mustek have jumped in with cameras. They might be new to photography as such, but they have distribution channels. Philips introduced its "VGA-quality" digicam at COMDEX.

Sharp and Panasonic, no newcomers to electronic cameras, have "VGA-quality" models as their latest; ditto Umax with the PhotoRun. Vivitar is redoubling its efforts in this market.

Ricoh, whose RDC-1 and 2 models had a higher pixel count, just introduced the zoom-lens RDC-300Z —a 6 x 4.

Can you see the pattern in these pixels?

The only release in the new-camera flurry with "XGA quality" was Agfa's ePhoto 780. Like the others, it targets the low-price consumer market with technical simplicity.

Meanwhile, all the VGAs are

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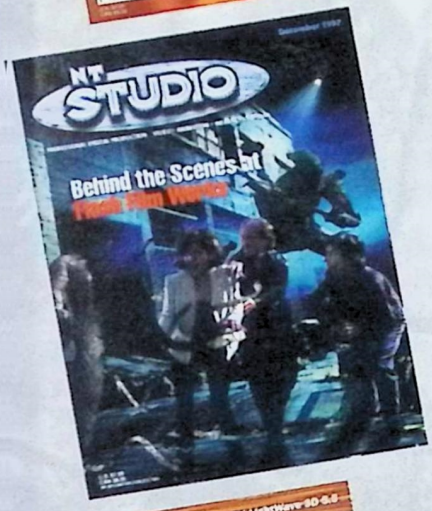

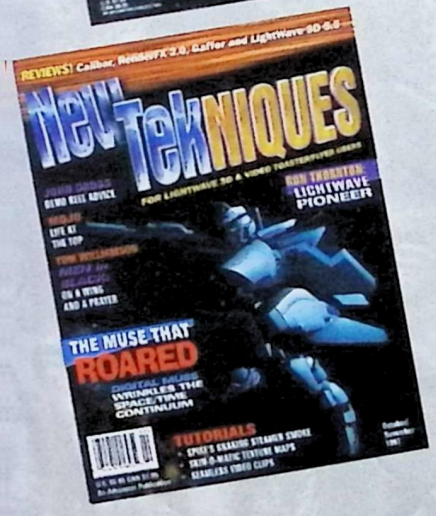
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is the only publication serving corporate digital content creators using Windows. Leading the industry in digital imaging, video and 3D animation coverage, *PC Graphics & Video* focuses on serving the information needs of creative professionals in the dynamic corporate market. Delivering superior and timely editorial including new product reviews, in-depth features, and techniques, *PC Graphics & Video* helps increase productivity and offers insight on technology and trends.

NT STUDIO

features the leading-edge facilities and talent capitalizing on new technology for broadcast video, film and animation production. Covering commercial digital production using Windows NT, *NT STUDIO* magazine delivers breaking business news, rare glimpses into the inner workings of studios, reviews of pro-level products, and hardware and software innovations in commercial video and animation studios.

NEWTEKNIQUES

offers in-depth coverage of NewTek's LightWave 3D and the Video Toaster/Flyer. *NewTekniques'* first priority is how-to educational content to help users improve the quality of their productions. Industry professionals share their insight with product reviews, tutorial features, user profiles, and dedicated coverage of NewTek news and technical developments.

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is the premier event addressing the convergence of digital content creation for both entertainment and business. The DCC Expo, being held December 2 - 4 at the Los Angeles Convention Center, is the first conference and exhibition bringing together two unique segments: buyers and resellers of digital content technology.

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COLOR DIGITAL VIDEO AND STILL IMAGE CAPTURE CAMERA FROM VISTA IMAGING

Vista Imaging, Inc., has released the ViCAM, a desktop color digital video camera that offers 30fps video in full color as well as the capability to capture 24-bit still images at 640 x 480-pixel resolutions. It ships with Viewer software that enables you to control all the features of the camera, as well as TWAIN and AVI drivers. It is powered by the PC and plugs into the ECP/EPP printer port. It is priced at $199.95 and ships with MGI VideoWave SE+ and MGI PhotoSuite SE. Contact Vista Imaging, Inc., 521 Taylor Way, Belmont, CA 94002, (650) 802-9685, www.vistaimaging.com.

Circle & Web # 191

POLAROID DROPS PRICE OF PDC-2000 CAMERAS

Polaroid Corp. has reduced the price of its PDC-2000/40 and PDC-2000/60 cameras to $1,699 and $1,999. The cameras, which were introduced in March of 1996, are among the first megapixel cameras, outputting images at 1600 x 1200-pixel resolutions. Contact Polaroid Corp., 565 Technology Square, Cambridge, MA 02139, (800) 816-2611, www.polaroid.com.

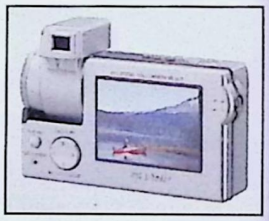
Circle & Web #190

PHOTOSPIN TO BUNDLE WITH SPECIAL VERSION OF WRIGHT DESIGN 2.0

PhotoSpin, Inc. and Wright Technologies have announced an agreement to bundle a time-limited version of Wright Design 2.0, with PhotoSpin's Royalty-Free Digital Image CD-ROM. PhotoSpin's CD-ROM image collections are comprised of 55 to 110 high-resolution images and are priced from $189 to $329. Wright Design 2.0 is a high-speed imaging, illustration, and page layout application that enables you to manipulate FlashPix-formatted images. Contact PhotoSpin, 29916 S. Hawthorne Blvd., Rolling Hills Estates, CA 90274, (888) 246-1313, www.photospin.com.

Circle & Web #188

SHARP OFFERS DIGITAL CAMERA WITH 2.5-INCH LCD



Sharp Electronics Corp. has released the VE-LC2, a digital camera that captures images at a maximum 640 x 480-pixel resolution and has a 2.5-inch color LCD and a detachable optical viewfinder. It has a 350,000-pixel CCD and a 6mm lens with shutter speeds ranging from 1/7.5 to 1/2000.

The camera features a built-in irDA port for data and image transfer, a 270-degree rotating lens, 4MB internal flash memory that can store up to 120 economy mode images, 60 normal mode images, or 30 fine mode images, an AC adapter, three AA batteries, a video output cable for viewing your images on a TV and saving them in VHS format, and EasyPhoto and PixLab imaging software. It is priced at $499.

Contact Sharp Electronics Corp., Sharp Plaza, Mahwah, NJ 07430, (800) 237-4277, www.sharp-usa.com.

Circle & Web #189

ONLINE PHOTOGRAPHIC SERVICE RESULTS FROM SONY/PICTUREVISION COLLABORATION

Sony Information Technologies of America and PictureVision, Inc. are collaborating to bring an online photographic service that enables digital camera users to to share, store, and transform images over the Internet. Sony will market a product called ImageStation and Picture Vision will bring PhotoNet to market, a service that enables users to upload their images to a secure area of the Internet, and have them printed. The cost of printing the images will comparable to that of traditional 35mm camera services. For more information, contact PictureVision, 250 Ste. A, Exchange Place, Herndon, VA 20170, (703) 733-0500 www.picturevision.com.

Circle & Web #187

Your Eye's on It

CONTINUED

compact, a few actually tiny—bittier than any film cameras save the "spy" types—with Panasonic and Sharp conspicuously trying to outsmall each other.

The Vivitars mentioned here, an earlier Toshiba low-priced minicam, and the cameras conjured out of the Intel kit, among possible others, use CMOS image sensors instead of CCDs. I had an exclusive demo of an Intel prototype, and would call the results good.

It is not as snappy as a CCD, all other things equal, but it's enough to make online PC photographics and video a household resource. You know those "tethered" cameras that sit atop computers like an eyeball? In 1998, we will see the tether break as the eyes go roving.

But if their features barely hover above the equivalent of 35mm single-use cameras, who's expected to buy 'em? Even at the $200 Intel projects for prices this year, or the $100 it anticipates in 1999? These may be digital, but their features still compete with $10 throwaways.

"Intel conducted a survey of PC owners," said the company's Peter Green at ImageScape 97, a recent panel by InfoTrends, "and we asked them, 'Assuming the prices of consumer peripherals were all the same, what would be your priority to purchase next?'

The first two choices were 'PC video camera' and 'a digital camera.' That's followed by scanners, keyboards, TV tuners, and Zip drives. And we expect 100 million new computers to ship next year."

Intel is very careful to differentiate "digital photography" from "PC photography." One is simply new technology doing old work. The other is new work altogether, and the industry collectively seems to be saying, "You just wait. You'll see what we mean. In a big way. Soon."

Contributing editor Don Sutherland operates Sutherland Multimedia (Staten Island, NY). He is the author of several books and has been writing about imaging since 1967.

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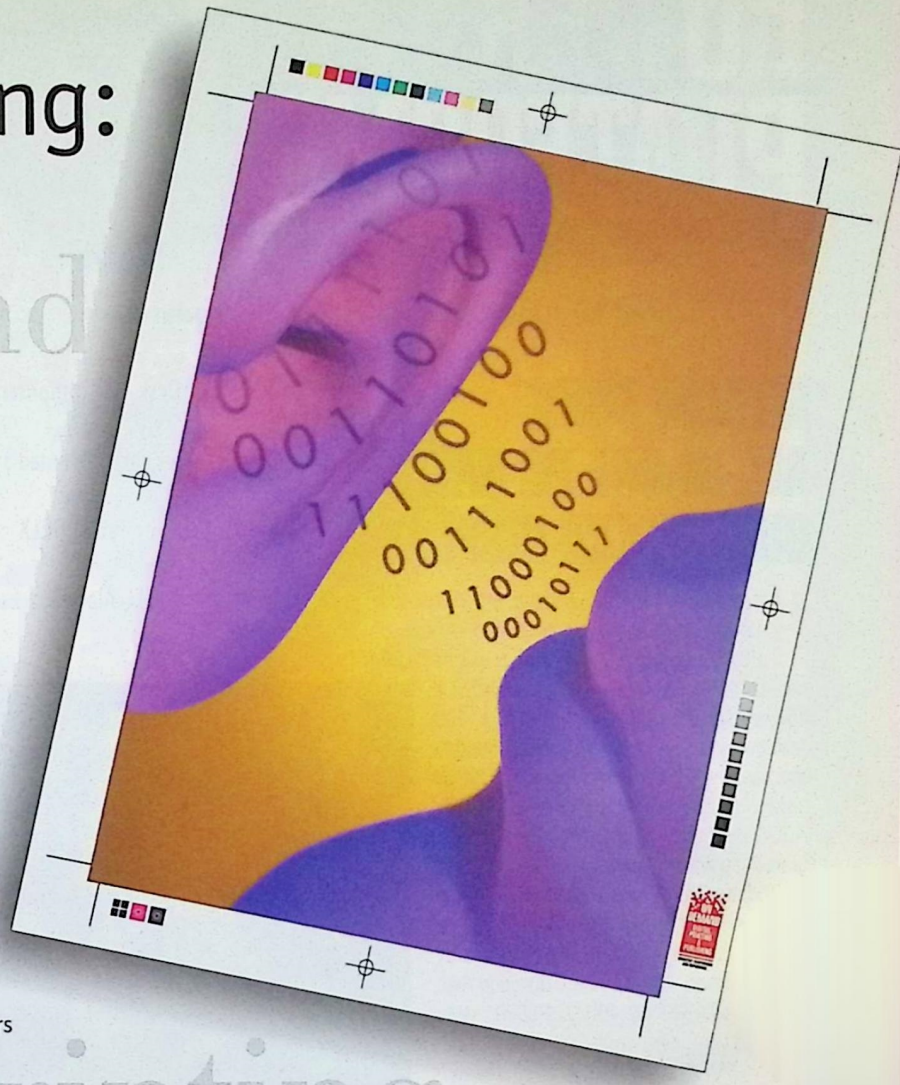

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POWER PLATFORMS

edited by John B. Virata

System updates

- Hitachi VisionDesk LCD computer
- Carrera SlimLine rack-mounted systems
- MaxVision Symbion Pro 3200LX
- Aspen Montrose DEC Alpha workstation

HITACHI SHIPS ALL-IN-ONE PC WITH BUILT-IN LCD DISPLAY

Hitachi PC Corp. has released the VisionDesk LCD desktop computer, an all-in-one desktop PC that features a 13.3-inch Super TFT LCD panel. The panel outputs a standard 1024 x 768 resolution with a maximum 1600 x 1200 resolution. It ships with a 233MHz Pentium processor with MMX technology, 512K L2 cache, 32MB RAM (upgradable to 256MB), 4.3GB hard drive, 20X CD-ROM drive, integrated audio and speakers, 56k modem, 10/100baseT LAN adapter, and an IRDA 1.0-compliant infrared port. It is priced starting at $3,299 and ships with a three-year warranty. Contact Hitachi PC Corp., 2520 Junction Ave., San Jose, CA 95134, (408) 321-5000, www.hitachipc.com.

Circle 6 Web # 173

CARRERA SHIPS SLIMLINE RACK-MOUNT SYSTEM

Carrera Computer has released its SlimLine family of rack-mounted computer systems with features such as a small footprint and a 19-inch industrial rack mount.

The SlimLine, with prices starting at $3,000, includes dual 300MHz Pentium II processors, 64MB RAM, Matrox Millennium graphics adapter with 4MB WRAM, 24X CD-ROM drive, and Windows NT 4.0. It is also available in 533MHz DEC Alpha or dual Pentium Pro configurations. Contact Carrera Computers, 23181 Verdugo Dr., Bldg. 100, Laguna Hills, CA 92653, (800) 575-7472, www.carrera.com.

Circle 6 Web # 174

Beta Release of NT 5.0 Being Widely Tested

by Ron Eggers

One of Bill Gates' announcements at the Fall Comdex keynote speech was the long-awaited availability of the Windows NT 5.0 beta release. In actuality, the NT 5.0 beta was released in late September at the Microsoft Professional Developers Conference, but the keynote, with an overflow crowd of 5,000 attendees, made a better forum. Gates is never one to pass up a promotional opportunity.

More than 6,000 select developers got an early look at the new NT beta. At Comdex time, Microsoft shipped out 200,000 copies to other developers and key corporate customers for beta testing.

One of the things that computer users who work with both Windows 95 and Windows NT miss when working with NT is plug-and-play extensibility. It was missing in NT 4.0, but it will be part of the 5.0 release, making it much easier to add hardware, peripherals and other system functionality. With plug-and-play capabilities, the system recognizes new hardware and streamlines its installation process.

As part of an effort to simplify expansion and configuration problems, the new NT includes a hardware wizard and Universal Serial Bus support. The hardware wizard consolidates the most commonly used hardware-related tools and functions into a single command set, making device management much more simple. USB support lets NT 5.0 users standardize on USB devices when adding on to their systems. The one-size-fits-all USB, with its hot connection and extensive chaining capabilities, eliminates much of the guesswork about expanding systems.

There are a number of objectives that Microsoft has set for the new version, many of them network related. Gates said that one of the main objectives of the new release is to simplify enterprise computing. It is supposed to significantly reduce the cost of operating enterprise computing resources by automating many of the network administration tasks required to keep all systems on a network current. For example, the new →

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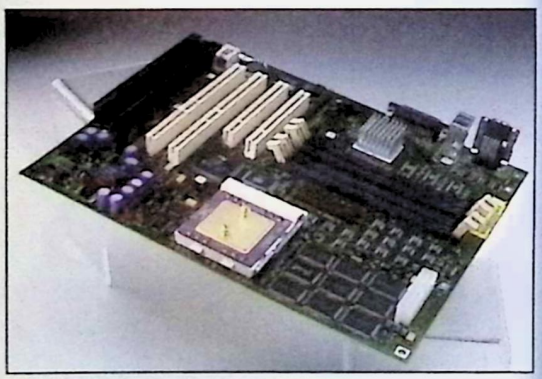
MaxVision Ships AGP Solution

MaxVision Corp. has released the Symbion Pro 3200LX, an AGP-based Windows NT workstation that features the Intel 300MHz Pentium II processor and the Intel 82440LX AGP set.

The base configuration includes a 300MHz Pentium II processor, 3DmaxP2 AGP OpenGL graphics subsystem with 8MB SGRAM, 64MB SDRAM, 6.4GB hard drive, and 24X CD-ROM drive. It features five PCI slots, two ISA slots, an AGP slot, 300-watt power supply, 64-bit PCI audio, and an Ethernet adapter. It is priced starting at $2,905. It is also available with the GLmax88M OpenGL graphics subsystem with 16MB SGRAM, 256MB SDRAM, 4.5GB Ultra Wide SCSI hard drive, Ultra Wide PCI SCSI controller, 24X CD-ROM drive, and an Ethernet adapter for $6,775. It ships with a three-year warranty and Windows NT 4.0 preloaded. Contact MaxVision Corp., Executive Park South, Bldg. 400, 2705 Artie St., Huntsville, AL 35805, (800) 533-5805, www.maxvision.com.

Circle 6 Web #175

MONTROSE: AN ECONOMICAL DEC ALPHA SYSTEM FROM ASPEN SYSTEMS



Aspen Systems has released the Montrose, a more economical DEC Alpha-based workstation that runs on the 21164PC processor. Targeted at the 2D graphics professional, the Montrose ships with a 533MHz Alpha, 1MB L2 cache, 64MB SDRAM, 2MB PCI video card, Ultra Fast Wide SCSI adapter, 2.1GB SCSI hard drive, 12X SCSI 2 CD-ROM drive, two 64-bit PCI slots, two 32-bit PCI slots, two ISA slots, Windows NT 4.0, 300-watt power supply, Keytronics Keyboard 101, and a Logitech three-button mouse. Pricing starts at $2,497. The system ships with a three-year motherboard and CPU warranty and a two-year parts/labor warranty. Contact Aspen Systems, Inc., 3900 Youngfield St., Wheat Ridge, CO 80033, (800) 992-9242, www.aspsys.com.

Circle 6 Web # 176

Power Path

(CONTINUED)

NT includes automated application setup and management, which enables an administrator to specify a set of applications that will always be available to a user or group of users. Also, according to the company, NT 5.0 will deliver the ultimate platform for developing and deploying distributed applications.

The new release includes enhanced file system management. FAT32, an improved version of the FAT file system, lets users format drives over 2GB, without separate logical drive partitions. Version 5.0 supports the NTFS file management system found in 4.0. FAT and FAT32 volumes can be converted to NTFS. Users can upgrade NTFS 4.0 to 5.0 with the included utility. Once converted, though, older versions of NT cannot access the NTFS 5.0 file management structure.

Another enhancement in 5.0 is the integrated Internet shell, which makes Internet access a seamless part of the user interface. In theory, users will need only the integrated shell within 5.0 to access and open incoming data, whether that data is coming from the Internet, a corporate intranet, or a local area network. Advanced browsing capabilities include AutoComplete, enhanced Web searching, a navigation history, and improved output options.

All major Internet standards are being supported, including HTML, Java and JavaScript, ActiveX, and Visual Basic scripting. Performance levels are improved with Dynamic HTML, a just-in-time Java compiler.

According to Microsoft, one of the biggest computing problems, when it comes to the Internet, is getting the information that's needed to where it's needed when it's needed. NT 5.0 helps with that by providing a mechanism to automatically select and schedule downloading of the required preselected information. Users can, for example, see what has changed on a Web site, without visiting the site.

Interestingly enough, while there was a lot of attention paid at Comdex to the newest release of Windows NT and improvements in Windows CE, the most important operating system for most computer users in the audience, Windows 98, was virtually ignored. At Microsoft's reception after the speech, some people speculated that Windows 98 was slighted because of the problems involved with it. Microsoft denies that.

NT 5.0 includes the Win32 driver model, an all-new, unified driver model that supports both Windows 98 and 5.0.

While it is possible to configure them to work together on networks and alternately on individual systems, Windows 95 and NT 4.0 never really were meant to co-exist. Frequently, programs that ran on one wouldn't run on the other. Some of those that did had problems. Moving from 95 to NT was a major undertaking that would be avoided if at all possible. NT 5.0 is the first NT release that simplifies the process. To assist with the upgrade process, a new Migration Extension Interface has been added to Setup.

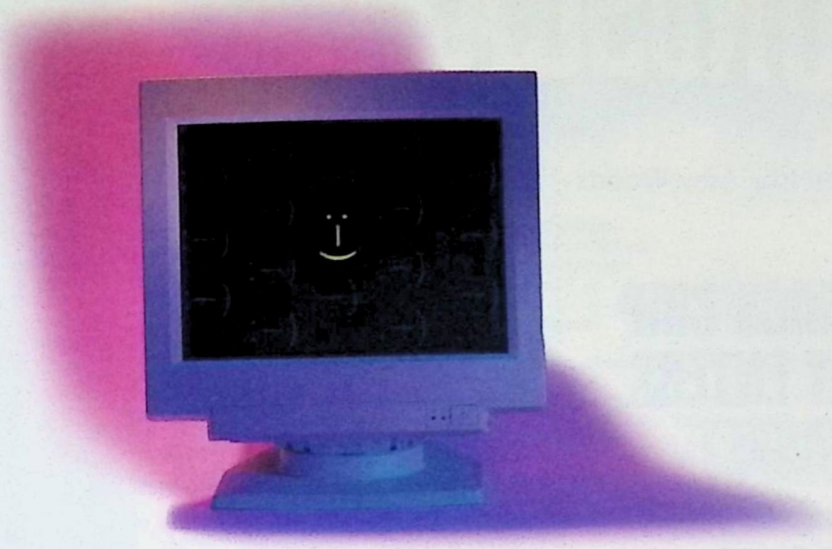
A major goal of the update is to preserve as many settings as possible, including device settings, system customizations, and installed applications when upgrading Windows 95 systems to NT 5.0. The Win32 Driver Model enables new devices to have a single driver for both operating systems. At the same time, no backward compatibility is lost for NT 4.0 devices.

Backward compatibility may be assured, but software compatibility isn't, at least with the beta release. While a lot of compatibility testing has taken place, and Microsoft has an extensive list of programs that have been tested with 5.0, there have been problems with a number of popular applications. Those include such programs as CorelDraw 6, WordPerfect Suite 7.0, Macromedia FreeHand 7.0, and ClarisWorks. Even some of Microsoft's own programs, like Money 97 and Office 97, among others, won't work properly with 5.0 yet.

In spite of the fact that some features in the new beta that have been announced have not been implemented yet, NT 5.0 is a significant step up in operating systems. With its added security encryption features, customizable toolbars, and enhanced desktop functionality, Windows NT 5.0 will set new standards for high-end computing.

Ron Eggers is a senior editor with NewsWatch Feature Service. He can be reached by email at 71210.3556@compuserve.com.

Stand Out in the Crowd



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Circle & Web # 239

SOUNDSCAPE

edited by Amy Woods

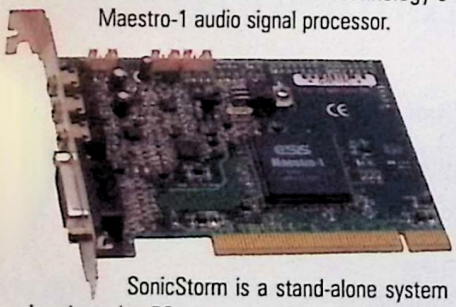
Audio technology and news

- VideoLogic releases audio accelerator
- Creative Technology acquires Cambridge SoundWorks
- IBM ThinkPad 770 notebook computers use CrystalClear audio chip solutions
- SoundMAX 32 digital audio board ships in Hewlett-Packard's Pavilion 8100 Series
- Aureal gets another technology patent
- Sonic Foundry to distribute Reality

3D GRAPHICS CHIP COMPANY ENTERS AUDIO MARKET

VideoLogic Launches SonicStorm Accelerator

VideoLogic has jumped into the PCI audio market with the launch of SonicStorm, an audio accelerator based on ESS Technology's Maestro-1 audio signal processor.



SonicStorm is a stand-alone system aimed at the PC games market. It offers PCI-based audio acceleration and supports Microsoft's DirectSound, Intel's AC97 codec, as well as DOS and Sound Blaster applications.

Use of the Maestro-1 technology enables a 64-channel audio stream, a 64-voice MIDI wavetable synthesizer, and 3D sound virtualization, according to the company.

SonicStorm comes bundled with three software applications: Midisoft Studio 4.0 Lite, AudioRack from ESS, and MixMan's 3-Mix, in addition to drivers. The list price is $99. Contact VideoLogic, 1001 Bayhill Dr., Ste. 310, San Bruno, CA 94066, (415) 875-0606, www.videologic.com.

Circle 6 Web # 196

CREATIVE TECHNOLOGY BUYS SPEAKER MANUFACTURER

Creative Technology, the Singapore-based parent company of Creative Labs, has acquired Cambridge SoundWorks in a deal worth an estimated $38 million. The purchase will give Creative a complete PC audio product solution, from card technology to final output.

"We didn't have access to the entire chain to deliver that entire audio process," spokeswoman Theresa Pulido said. "They [Cambridge] bring that missing component."

Cambridge, based in Newton, MA, manufactures 33 different models of home, automobile, and computer speakers, including MicroWorks, SoundWorks, and PC Works. Creative's product line includes the Sound Blaster AWE64, PC-DVD Encore, and Graphics Blaster Exxtreme.

SONIC FOUNDRY TO DISTRIBUTE REALITY

Sonic Foundry, maker of Sound Forge audio-editing software for Windows, is offering a software-based professional synthesizer that runs on Pentium PCs.

The synthesizer, Seer Systems' Reality, will provide users with a less-complicated solution to traditional cable-based MIDI synthesizers, according to the company.

The combination of Sound Forge and Reality will allow developers to create music for a variety of media including CD, film, or the Web, the company said. Contact Sonic Foundry, Inc., 754 Williamson St., Madison, WI 53703, (608) 256-3133, www.sonicfoundry.com.

Circle 6 Web #100

A3D Is A1 to PC Game Developers

by Amy Woods

Audio technology based on Head Related Transfer Function filters and 3D positional sound algorithms might not excite the PC game-playing public.

But when you're about to get blown up by an approaching enemy, and the sound of gunfire behind you saves your life, the technology can be kind of cool.

Sound card manufacturers and software developers are dealing with the nerdish tedium of codecs and signal processors so that hard-core gamers can experience real-world sounds.

"We think we're in every key title coming out," said Toni Schneider, vice president of marketing at Aureal Semiconductor, developers of the popular A3D technology. "I think it's definitely getting embraced as the next level of audio rendering."

Aureal engineers developed A3D in September 1996. It generates what the company calls 3D positional audio, or 360-degree surround sound, from two ordinary speakers connected to a multimedia PC.

"Heavy Gear" from Activision is one of many games that takes advantage of Aureal's A3D technology.

The technology has received 15 U.S. patents, won support from dozens of game developers, and is on its way to becoming "the 3Dfx of the audio world," according to a promotional brochure.

Among the new titles to feature A3D are "Heavy Gear" from Activision and "Starfleet Academy" from Interplay Productions.

"The reason that we picked it is it's really the only game in town for 3D hardware-accelerated sound," Activision producer Chacko Sonny said. "From a

→

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28 ◯ 24	37 ◯ 24	CD-ROM Drive	46 ◯ 33	56 ◯ 33 Windows NT
29 ◯ 25	38 ◯ 25	Scanners	47 ◯ 34	57 ◯ 34 Windows '95
30 ◯ 26	39 ◯ 26	Sound Cards	48 ◯ 35	58 ◯ 35 Color Printers/Copiers
31 ◯ 27	40 ◯ 27	15-Bit/16-Bit Color Graphics Boards	49 ◯ 36	59 ◯ 36 TV Boards
32 ◯ 28	41 ◯ 28	24-Bit Color Graphics Boards	50 ◯ 37	60 ◯ 37 Digital Camera
33 ◯ 29	42 ◯ 29	32-Bit Color Graphics Boards	51 ◯ 38	61 ◯ 38 Video Equipment/Camcorder
			52 ◯ 39	62 ◯ 39 Other (please specify)_____

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65 ◯ 0003	69 ◯ 0003	Publishing	73 ◯ 0007	77 ◯ 0007 Video Editing
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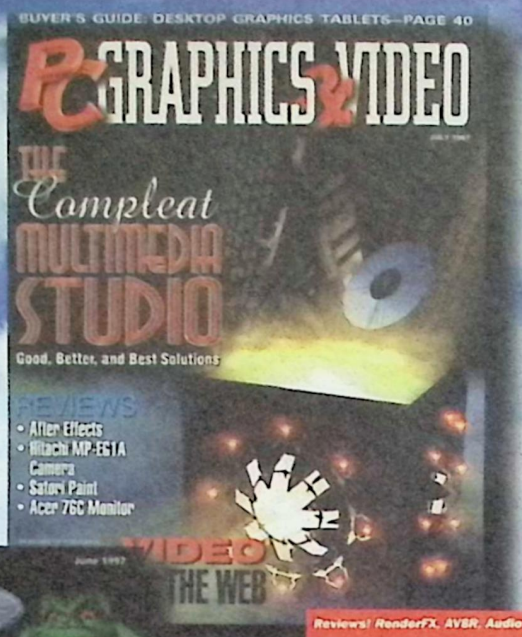

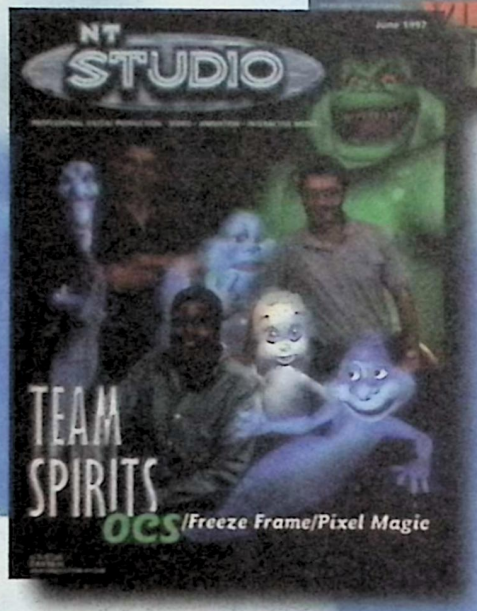

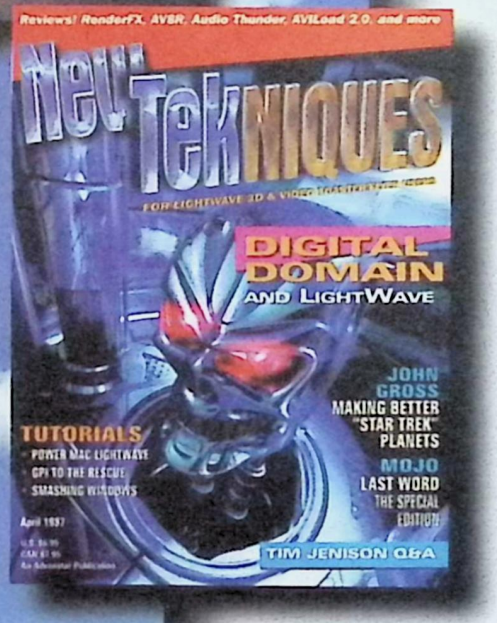

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IBM INCORPORATES CIRRUS LOGIC AUDIO

CrystalClear Solution Featured in IBM ThinkPad 770 Notebook

Cirrus Logic's CrystalClear audio chip solution, CS4237B, has been incorporated into the IBM ThinkPad 770 notebook computer. The chip provides SRS 3D sound enhancement, supports DirectSound, and is Advanced Power Management 1.2-compliant, according to the company. It also is compatible with ISA Plug-and-Play, Sound Blaster and Sound Blaster Pro, and QSound 3D, the company said.

The ThinkPad 770 is the latest IBM computer to tap Cirrus Logic as its audio technology provider. The ThinkPad 380 includes the CS4236B chip, and the Aptiva multimedia PC features the CS4610 PCI accelerator. The list price for the ThinkPad 770 ranges from $5,000 to $7,199.

Contact IBM, Rt. 100, Somers, NY 10589, (800) 426-2968, www.us.pc.ibm.com/thinkpad.

Circle 6 Web # 195

SOUNDMAX AUDIO SUBSYSTEM SELECTED FOR USE IN HP PAVILION 8100 SERIES

Analog Devices' SoundMAX 32 digital audio board is offered in Hewlett-Packard's Pavilion 8100 Series, bringing treble and bass boost capabilities, power amplification, and speaker equalization to the multimedia PC line, according to a representative from the company.

SoundMAX 32, which is ISA-based, includes a digital game port, options for digital wavetable, and 3D acceleration. The company representative said it will enhance such applications; as 3D games and CD and MIDI playback.

The Pavilion 8100 Series has a list price starting at $1,699 without a monitor.

Contact Hewlett-Packard, 10500 Ridgeview Ct., Cupertino, CA 95014, (800) 724-6631, www.hp.com.

Circle 6 Web # 194

Aureal Semiconductor Receives 15th Patent

For Proprietary Methods of Compressing HRTF Audio Filters

Aureal Semiconductor received another patent—its 15th—for proprietary methods of compressing HRTF (Head-Related Transfer Function) audio filters used in the company's A3D Interactive audio standard.

The methods have been in development for more than six years at Aureal's Crystal River Engineering subsidiary, according to a company representative.

The patent signifies Aureal's intellectual property leadership position in the 3D audio market, according to chief technology officer Scott Foster.

Because the HRTF filters form the core of A3D technology, the patent also delivers an obstacle to other companies implementing 3D audio systems, Foster said.

More than 50 PC games developers use A3D for their 3D audio effects.

development standpoint, we always want to support the cutting edge."

Although A3D can be enabled through software solutions and APIs (including Microsoft's DirectSound), hardware solutions are more important to game developers.

"Software-accelerated sound takes so much of the processor overhead," Sonny said. "All of the different APIs we looked at took too long to move."

"Heavy Gear" is a combat game that puts the player behind the controls of a 15-foot-tall robot as a civil war rages on the planet.

"The effect [of A3D] is, in fact, very, very cool," Sonny said. "You'll be able to hear where an explosion occurs or where a gunshot is coming from. It adds an additional degree of depth to the game."

In "Starfleet Academy" from Interplay, A3D enables players to hear explosions behind them.

The first sound card to offer A3D technology was Diamond Multimedia Systems' Monster Sound, which has been available for almost a year.

At Fall Comdex, deals were sealed with Xitel Corp., Shark Multimedia, and Sanyo, each of which is developing a sound card based on A3D. Another agreement was reached with NEC, the first major PC vendor to integrate A3D technology into its systems.

Interplay producer David Coy said Aureal's technology not only blows away the competition, but also has an installed base of sound cards that is continuing to grow.

"Aureal seems to be on a roll," Coy said. "They're signing deals left and right."

Amy Woods is associate editor of *PC Graphics & Video*. She can be reached online at awoods@pcgv.com.

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CYBER PUBLISHING

edited by John B. Virata

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- NetObjects Fusion2Fusion connectivity kit
- Microsoft ships FrontPage 98
- W3C releases HTML 4.0 specification
- Adobe ships 12 original typefaces
- Totally Hip Software sells WebPainter
- *XML: Principles, Tools, and Techniques*

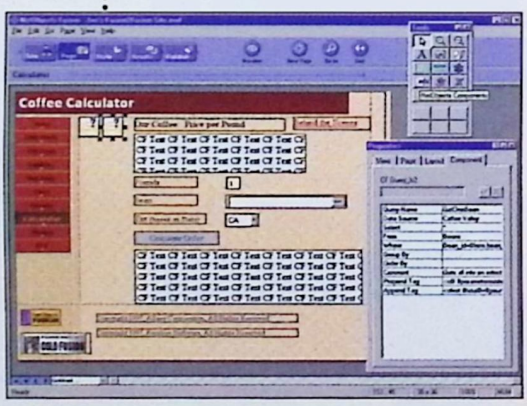
NETOBJECTS
Gets a Dose of Cold Fusion

Web designers can create data-driven sites with dynamically generated elements that offer a higher level of user interactivity than other sites, using Fusion2Fusion.

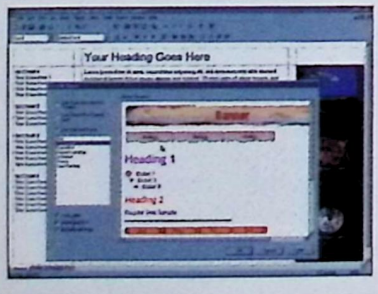
Fusion2Fusion combines Allaire Corp.'s Cold Fusion, a rapid application development system, with NetObjects Fusion, a visual design tool.

The technology and marketing partnership agreement reached between the two companies provides a set of Java-based NetObjects Fusion components that enable developers to drag and drop, re-size, or copy dynamic objects created in Cold Fusion within NetObjects' properties palette interface. The connectivity kit can be downloaded from Allaire's Web site (www.allaire.com) for $99. Contact Allaire Corp., One Alewife Center, Cambridge, MA 02140, (888) 939-2545.

Circle 6 Web #168



MICROSOFT SHIPS FRONTPAGE 98



Microsoft Corp. has released FrontPage 98 with new features such as support for cascading style sheets, dynamic HTML, and automatic hyperlink updates, which update any hyperlinks when you rename assets or drag and drop files to other folders on your Web site.

Other features include the capability to add Java applets, ActiveX controls, browser plug-ins, support for database content, WYSIWYG tables, frames editing, the Microsoft Image Composer, Microsoft GIF Animator, and more than 2,000 image samples. It also has a Wizards feature that enables you to let the program build your page by answering questions.

System requirements are a 486 or higher PC, 16MB RAM for Windows 95 and 32MB RAM for Windows NT, 36MB hard disk space, CD-ROM drive, VGA or higher resolution video adapter, and Internet access. It is priced at $149. Microsoft Office for Windows 95 and Office 97 users can upgrade for $99. FrontPage 1.1 and FrontPage 97 users can upgrade for $54.95. Contact Microsoft Corp., One Microsoft Way, Redmond, WA, 98052, (425) 882-8080, www.microsoft.com.

Circle 6 Web # 169

Bits 'n' Pieces

by Sandy Lurins

Looking for ways to add a little pizzazz to your pages? In need of some inspiration? My three newest bookmarks for Web design offer just that.

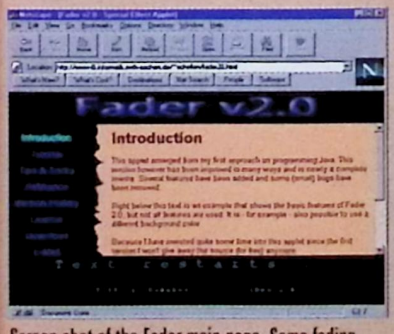
If you've been wanting to try out special text effects, there's a great applet called Fader 2.0, which was developed by Johannes Schellen. Fader allows you to do a variety of things with text based on fades and wipes.

You set parameters to control the type size and face, colors used, wipe direction, and so forth, resulting in text that blinks, scrolls, displays multiple colors, simulates terminal output, and more.

One of the things I like best about Fader is that Schellen's site offers a lot of information on how to use the script and make your own variations.

This is invaluable for anyone just getting started with Java because setting up your first script and testing it locally can be a frustrating experience.

Fader is available for noncommercial use as postcardware, or for commercial use, Schellen requests $10 for each domain using the applet. Make sure you check out Schellen's Tutorial and Tips and Tricks sections to get the most out of Fader. You will find the applet at www-i5.informatik.rwthaachen.de/~schellen/fader20.html.



Screen shot of the Fader main page. Some fading text is visible near the bottom.

If you've got a few extra bucks to spend and decide you really want to get into Java after you've tried out Fader, I'd suggest you cruise over to OpenCube (www.opencube.com).

OpenCube offers a variety of nifty Java applets ready-made for the nonprogramming Web designer. Its Web Effects sets contain from 28 →

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MiroVIDEO DRX 259.00

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GRAPHICS AND VIDEO SOFTWARE

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Boris Effects Pro, Mac	Call
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MediaMotion 3.0	145.00
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MeshPaint 3D	199.00
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PhotoShop	559.00
Power Surge: FX Filters	129.00
Power Surge Generator	429.00
Power Surge: Transformer	169.00
Poser 2, Intel/Mac	149.00
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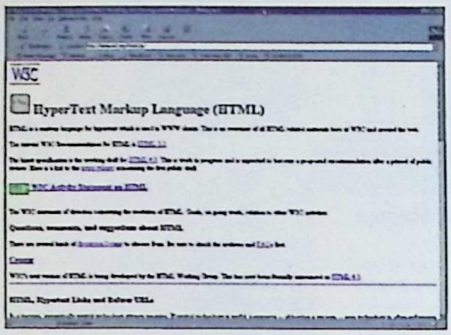
HTML 4.0 Specifications Released as W3C Recommendation



The World Wide Web Consortium has released the HTML 4.0 specification as a W3C proposed recommendation, citing HTML 4.0's stability, Web interoperability, and industrywide support. HTML 4.0 now goes through the six-week review and voting process by the 220 W3C members.

HTML 4.0 improves the look and functionality of Web pages, with new features such as advanced forms, which enable publishers to display rich HTML on any button, build keyboard shortcuts into page controls, and create read-only documents for copyright protections. It also features in-line frames, enhanced tables, and support for objects and scripts. It is also more accessible to users with disabilities, enabling table and form text to be rendered into Braille or speech. More HTML 4.0 information can be viewed on the consortium's Web site at www.w3.org/MarkUp.

Adobe Ships WebType

12 ORIGINAL TYPEFACES OPTIMIZED FOR ON-SCREEN VIEWING FOR $49.99

Adobe Systems has released Adobe WebType, a collection of 12 Adobe original typefaces that are optimized for on-screen viewing.

The collection includes Caflisch Scripture Web, Mezz Web Bold, Penumbra Web Regular Serif, Giddyup, and five fonts from the Myriad family: Web Regular, Web Italic, Web Bold, Web Condensed Regular, and Web Condensed Italic.

It is priced at $49.99.

Contact Adobe Systems, 345 Park Ave., San Jose, CA 95110, (800) 445-8787, www.adobe.com.

Circle 6 Web # 170

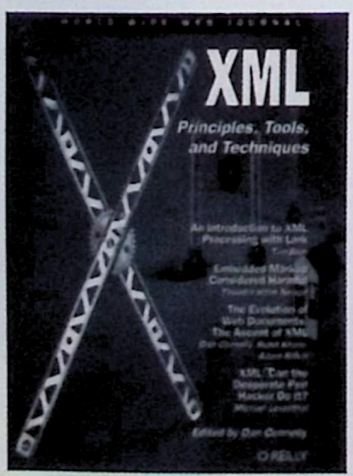
TOTALLY HIP SOFTWARE

SELLS WEBPAINTER, OTHER PRODUCTS FOR $10 MILLION

Totally Hip Software has sold its WebPainter, CastPainter, and Hip Clips products to Columbia Diversified Software Limited Fund Partnership for $10 million. Under terms of the agreement, Totally Hip Software will get $3 million in cash from Columbia during the next 10 months and will carry a vendor take-back promissory note totalling $7 million.

Totally Hip Software will continue to develop, market, distribute, and resell the products. After Columbia completes the acquisition, Totally Hip Software will retain 90 percent of net sales and Columbia will receive 10 percent.

LEARN ALL ABOUT XML STANDARDS



TIPS, TECHNIQUES, AND THE PRINCIPLES OF USING XML CODE FOR WEB DESIGN

XML: Principles, Tools, and Techniques, by Dan Connolly. 248 pages. $29.95. This book discusses the latest developments in Extensible Markup Language, an emerging standard for structured documents on the Web. XML extends HTML and adapts SGML, paving a simplified path for developers to write programs that will offer a richer encoding of information. This book details the technical specification and applications of XML and the changes it is expected to make to the Web experience.

Contact O'Reilly & Associates, 101 Morris St., Sebastopol, CA 95472, (800) 998-9938, www.ora.com.

Circle 6 Web # 171

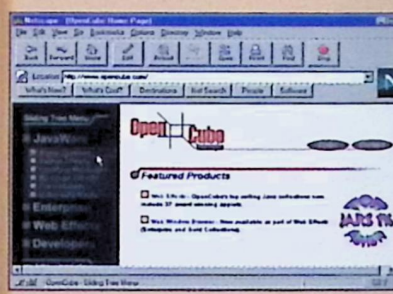
Web Worx

CONTINUED

($149) to 37 ($289) applets that you can modify and incorporate in your Web pages.

I particularly liked OpenCube's sophisticated Sliding Tree Menu applet (part of its Enterprise and Gold Web Effects collections). You can download a trial version of the Sliding Tree Menu, as well as see it in action, at www.opencube.com/example_tm.htm.

Other goodies in OpenCube's collections include menu and navigation systems, text effects, and buttons effects (including audio buttons).



OpenCube's Sliding Tree Menu.

One caveat: Think carefully how and where you will use Java and use it judiciously. I have the ubiquitous Netscape 3.0 browser running at 28.8k, and OpenCube's site crashed my system several times.

Make sure your audience will benefit from and appreciate your Java innovations, and remember a little goes a long way.

I found another great jump list of design resources I know I will revisit. The Jellybean Resources at www.jellybean-photo.com/beanbag/resources.html features a great selection of links to images and photography, fonts, art, artists, clip art, publications, and Photoshop resources. It also has resources for print designers.

The last thing you need is another mouse pad, right? Well, here's one that just might be worth considering.

R35 (www.r35.com/direct.htm) offers the WebColor Pad—a mousepad that keeps the browser-safe colors and their hexidecimal values at your fingertips. Now, if only they'd include the RGB values.

Anyway, you can see the pad up close at www.r35.com/pad.htm and online ordering is available if you like the $12.95 price.

Sandy Lurins develops Web projects in Eugene, OR. She can be reached at slurins@rio.com.

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miroMOTION DC30 for PowerMac - $749.95

miroVIDEO DC20 *plus* Video Production System for Multimedia & Web Streaming

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Adaptec 2940U - $200... or 2940UW - $250 w/drive

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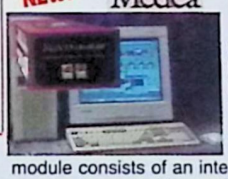

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NEW! PowerPlay software lets you play back up to one-hour of video! • A/V Lock for perfect lip sync every time! • PCI Bus Mastering • 16-bit, 44.1kHz sound digitizing with full sample data rate, WAVE compatible • 640x480 S-VHS quality • 30 frames/60 fps • M-JPEG compression as low as 4:1 • 32-bit, Win95 & NT compatible • Ulead Media Studio Pro 5.0 with Smart Render technology **$799.95**

NEW! DPS EditBay Professional A/V Capture System

• S-VHS, M-JPEG compression as low as 2.5:1 • Transfer rates at 6.5MB/sec •16-bit, 48kHZ CD-quality audio capture on-board • View your video on your computer monitor • PCI Bus Mastering • 640x480, 30 frames, 60 fps • 720x480 CCIR 601 Active Area support • Includes DPS Video Action Pro for editing, transitions & 3D effects including video page flips, turns & rolls **$749.95**

Spark Plus now w/ built-in SCSI controller - $599.95

Promise FastTrak Storage Solution

• PCI IDE RAID controller links multiple Ultra ATA/EIDE drives as one BIG bootable drive • Turbo-charge data transfer rates • Speed up A/V editing **$139.95**

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Hollywood FX 3.0 Gives You Pro Quality In Software Rendered Effects

Easy-to-use plug-in now works with Adobe Premiere, Ulead Media Studio Pro & more. Just drag & drop the icon into your timeline, the Selection Dialog will appear and let you select from over 100 incredible effects. **$399.95**

TAKE32 - 32 of the most popular transitions... **$49.95**

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Boris FX 3.0 Is the Top Rated TV Style 3D DVE Plug-In

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GRAPHICS GEAR

HOT NEW PRODUCTS AND SOLUTIONS
edited by John B. Virata

- SyQuest 4.7GB Quest drive
- QuarkXPress 4.0
- Panasonic PT-L555U SVGA projector
- AdvanSys Ultra Wide SCSI adapter
- Sony GDM 500PS monitor
- FutureTel Video Sphinx Pro
- Truevision Bravado 2000
- ArcSoft Zipshot
- Umax SnapView

4.7GB SYQUEST DRIVE

Quest Removable Has 2MB Cache Buffer

SyQuest Technology has released Quest, a 4.7GB removable hard disk cartridge drive that features a 2MB cache buffer coupled with an Ultra Wide SCSI interface that allows full motion playback and real-time streaming video direct from the drive without dropped frames, according to the company. The internal device incorporates dual-stripe magneto-resistive recording heads and features a sustained maximum data transfer rate of 10.6MB per second and an average seek time of 12 milliseconds. It is priced at $599 and includes one 4.7GB cartridge. Additional cartridges are priced at $199. Contact SyQuest Technology, 47071 Bayside Pkwy., Fremont, CA 94538, (510) 226-4000, www.syquest.com.

Circle 6 Web # 177

QuarkXPress 4.0 Ships

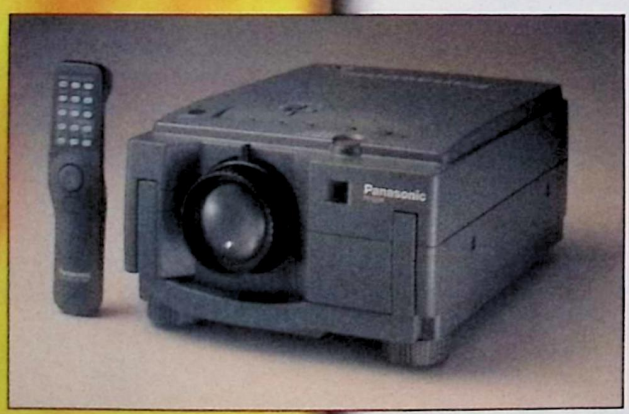
Quark has released version 4.0 of QuarkXPress, the company's flagship page layout tool, with more than 75 new features such as character-based style sheets, drawing tools, and text on a path.

Other features include tools that enable you to draw curved lines and picture or text containers with Bezier and freehand tools that can be found in illustration software; a tool that enables you to flow text along a Bezier path or turn the text into a Bezier box with outlines that can be filled with content; the capability to generate clipping paths; and support for long documents.

Networked users will be able to create a file called a Book, which is comprised of Quark documents with streamlined page numbering, and share the same style sheets, colors, and hyphenation and justification settings. Version 4.0 runs on Windows 95 and NT. It is priced at $995.

Contact Quark, Inc., 1800 Grant St., Denver, CO 80203, (800) 676-4575, www.quark.com.

Circle 6 Web # 178



Panasonic Ships Portable SVGA LCD Projector

11-Pound Unit Features Built-in PCMCIA Memory Card Slot

The PT-L555U from Panasonic is a portable SVGA LCD projector that weighs 11 pounds and has a brightness of 450 ANSI lumens. It features a built-in PCMCIA memory card that enables you to make presentations without having to be connected to a PC. Other features include a Digital Still Camera Slide Show, which enables you to display digital images by inserting a still camera's compact flash memory card into the projector's PCMCIA slot, an expected 2,000-hour lamp life, front and rear projection, selectable five language on-screen display, manual focus and zoom, and RGB input, output, composite video, and S-Video inputs. It accepts most video signals, including SECAM, NTSC, M-NTSC, PAL, PAL-M, and PAL-N. Priced at $5,495, it ships with a three-year warranty.

Contact Panasonic Broadcast & Digital Systems Co., One Panasonic Way, Secaucus, NJ 07094, (800) 524-0864, www.panasonic.com/presentations.

Circle 6 Web # 179

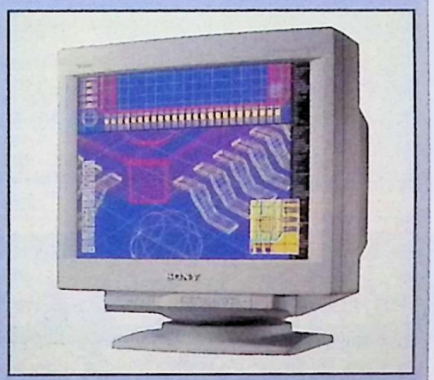
ULTRA WIDE SCSI ADAPTER SHIPS FROM ADVANSYS

Card Can Support Up to 15 SCSI-1, -2, or -3 Devices

AdvanSys has released the ABP940-UW, an Ultra Wide SCSI adapter that features AdvanSys Super SCSI, a software-based SCSI installation problem analyzer. The device can support up to 15 SCSI-1, SCSI-2, or SCSI-3 devices via 8K internal RAM (expandable to 72K) and a proprietary, dedicated RISC processor that is designed to relieve the host system of I/O tasks. It is priced at $189. Contact AdvanSys, 1150 Ringwood Ct., San Jose, CA 95131, (800) 525-7443, www.advansys.com.

Circle 6 Web # 180

SONY ELECTRONICS MONITOR FAMILY EXPANDS



Sony Electronics has released the Sony GDM 500PS, a 21-inch monitor with a 19.8-inch viewable image size.

Features include Sony's Active Signal correction, a technology that monitors the video signal input and automatically sizes and centers the image to current standard VESA timings.

The GDM 500PS features Sony's Beam Landing Correcting technology, a feature that enables you to adjust the exact placement of all three electron beams, enhancing color purity and uniformity across the CRT.

It is priced at $1,799 and ships with a three-year warranty. A similarly configured 19-inch model, the GDM 400PS (18-inch viewable image) is priced at $1,199. Both monitors are TCO 95 compliant. Contact Sony Electronics, 330 Zanker Rd., San Jose, CA 95134, (800) 476-6972, www.sony.com/newdisplays.

Circle 6 Web # 181

TRUEVISION SHIPS BRAVADO 2000

Card Captures Full-Screen, Full-Motion Video

Truevision has released the Bravado 2000, a video capture card that captures and outputs full-screen, full-motion 60 fields per second video (50 fields per second PAL).

The card supports composite and S-Video inputs/outputs in NTSC and PAL and offers on-the-card audio processing. Additional features include variable rate and real-time Motion-JPEG compression at up to 6MB per second with full CCIR-601 resolution.

It ships with Adobe Premiere and is priced at $899.

Contact Truevision, 2500 Walsh Ave., Santa Clara, CA 95051, (800) 522-8783, www.truevision.com.

Circle 6 Web # 182

FUTURETEL'S AV ENCODER

Video Sphinx Pro Offers Real-Time MPEG Edit, Capture

FutureTel has released the Video Sphinx Pro, an AV encoder and software solution that offers real-time capture and editing of MPEG audio and video. It offers IBP frame accurate editing and trimming inside the Sphinx interface and includes a visual storyboard.

The interface is divided into five rooms: a MovieClip Capture and Trim Room, where you capture and edit video; The Album Room, where images and video are stored; Media Show Room, which enables you to assemble video clips, stills, audio, and graphics files into a multimedia presentation; SnapShot Room, which is optimized for capturing and playing back high-resolution still frames from video; and the ClipGlue Room, which acts as an editing room. Here you can drag and drop MPEG clips into the storyboard to create new movies.

Video Sphinx Pro ships with Kai's Power Goo from MetaCreations and Macromedia Backstage. It is priced at $399. Contact FutureTel, Inc., 1092 E. Arques Ave., Sunnyvale, CA 94086, (888) 774-4692, www.sphinx2.com.

Circle 6 Web # 183

QUICK TAKES

PLUG-INS PORTED TO MEDIASTUDIO PRO 5.0

Artel Software (www.artel.com), developer of Boris Effects 3.0, MetaCreations, (www.metacreations.com), developer of Final Effects, and Synergy International (www.synergy1.com), developers of Hollywood F/X and Take 32, have ported their respective plug-ins to Ulead's MediaStudio Pro 5.0 (www.ulead.com).

MGI VIDEOWAVE PORTS TO NT

MGI Software (www.mgisoft.com) has announced that its $99 VideoWave video editing and publishing software has been ported to Windows NT, enabling the company to go after the corporate video editing market.

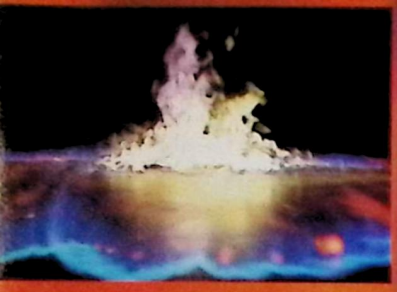
PHOTOSPIN/KGA FLASHPIX BUNDLING AGREEMENT

PhotoSpin (www.photospin.com) and Koyosha Graphics of America (www.koyosha.com) have announced a bundling agreement that will include KGA's FlashPix XT extension for QuarkXPress on PhotoSpin's Royalty Free Digital Image CD-ROMs. The FlashPix extension enables Quark users to import FlashPix images directly into QuarkXPress where they can be viewed and positioned in high resolution.

DATA TRANSLATION SHIPS BROADWAY V UPGRADE KIT

Data Translation (www.hway.com) has released the $399 Broadway V Beginner Upgrade Kit, enabling Broadway V Beginner owners to add the features of Broadway version 2.5. The new capabilities include real-time MPEG 1 capture, Internet media streaming support, Video CD compression, and Ulead MediaStudio Pro.

MORE EXPLOSIONS AND FIRE FOR THE DIGITAL PYROMANIAC



Pyromania Pro from Visual Concept Engineering is a royalty-free CD-ROM collection of more than 30 explosive visual effects images. The collection includes zero-gravity and ground-based explosions, blasts during daylight and nighttime, and fires. It is priced at $299. Contact VCE, 13300 Ralston Ave., Sylmar, CA 91342, (800) 242-9627, www.vce.com.

Circle & Web # 184

ARCSOFT RELEASES ZIPSHOT

ArcSoft has released Zipshot, a still and moving video capture device that plugs into the parallel port of the PC.

Features include real-time preview and color adjustment, time elapse capture, and continuous image capture capabilities. It supports most popular graphics and video file formats, including BMP, TIF, JPEG, PCX, TGA, and AVI and offers a maximum still image capture resolution of 1600 x 1200 and a maximum video capture resolution of 320 x 240.

The device supports NTSC, SECAM, PAL, and S-Video and works with all video cameras, digital cameras, VCRs, TVs, and other video sources. It also works with TWAIN-compliant software. System requirements are a 486 or Pentium PC with 8MB RAM, a CD-ROM drive, and 20MB hard disk space.

It is priced at $129.

Contact ArcSoft, 4015 Clipper Ct., Fremont, CA 94538, (510) 440-9901, www.arcsoft.com.

Circle & Web # 185

UMAX TECHNOLOGIES Enters Still Video Capture Market With SnapView

Umax Technologies has released the SnapView, a still video capture device that offers 1500 x 1125 still image resolutions from a variety of video sources, including camcorders and televisions.

It ships with Adobe PhotoDeluxe and Presto! PhotoAlbum, and is priced at $89.

Minimum system requirements are a 486 with 8MB RAM, Windows 3.1 or higher, a printer port, and a CD-ROM drive.

Contact Umax Technologies, 3561 Gateway Blvd., Fremont, CA 94538, (510) 651-4000, www.umax.com

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graphic communications 3

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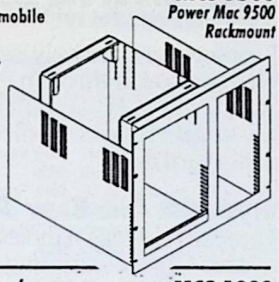

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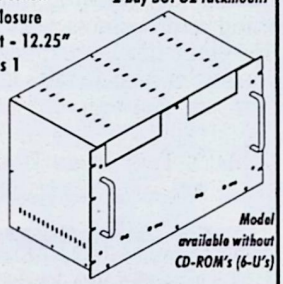

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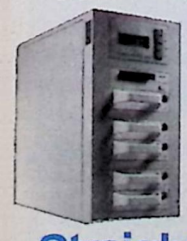

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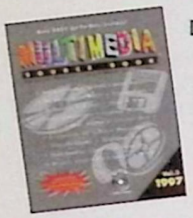

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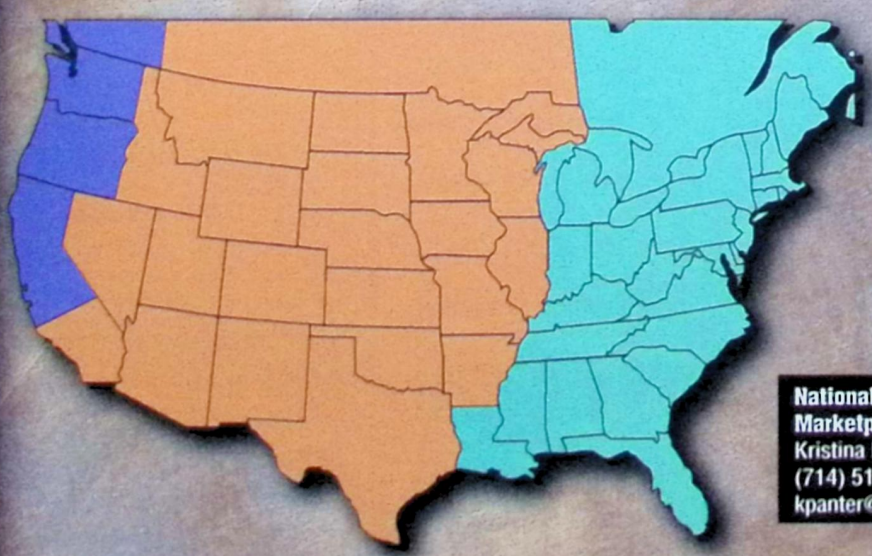

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When most people hear the term CGI, they immediately think of *Star Wars*, *Jurassic Park*, or the latest explosion-filled action movie.

J.V. Bolkan

The CGI Evolution

Just a few years ago, it was easy to look at a finished work and make a good guess about the creative application used to produce it. That is no longer easy to do. For the most part, current applications differ more in how they work than in what they produce. The "application signature" of most pieces is virtually nonexistent. That was a minor challenge, but an important one in the evolution of CGI. The real reason for the signatures in the first place was simply that developers were faced with compromises.

For instance, a 3D animation package might have included the capability to render atmospheric effects, but not in full color. In that case, a washed-out render with great fog or smoke elements would stand out as a product of that particular program. Fortunately, the compromises forced by hardware and operating system limitations are less severe, thus the disappearance of the signature.

The next challenge is even more subtle, and really isn't primarily a hardware or software issue. And this challenge isn't about getting past something, it's about adding something. When most people hear the term CGI, they immediately think of *Star Wars, Jurassic Park,* or the latest explosion-filled action movie. There is nothing wrong with CGI being used to create science-fiction or implausible effects—there is no better way to get these types of images to film.

The problem is that CGI is now capable of entering the real world, and too few people are pushing that envelope. It's one thing to create an alien landscape or even a dinosaur, but it's a completely different level to create something we all see every day. Who knows if your alien planet is botanically, chemically, and physically accurate? Did Tyrannosaurus Rex have green palm-sized scales, or were they purple dime-sized scales?

The coolest thing about *Toy Story* wasn't that it was fully CGI, but that the characters were familiar to us. The toy soldiers looked just like the ones I played with as a kid. But, toys still aren't that complicated—when they move, who can say that's not the way a plastic toy soldier would march?

The next step in CGI is producing more complex real-world images. It's a huge difference. The burden on the artist is quite different. Imagining and creating a monster that will scare lots of people requires a certain type of skill and imagination. Deciding what facial expressions to put on a CGI human face, then crafting the transitions from one expression to another requires a much different set of skills and a different type of imagination.

Obviously, CGI is still too expensive to be used for mundane scenes that could be easily captured directly on film. Still, there are ample opportunities to use CGI to recreate reality. Obvious examples include dangerous or impractical shots. Hollywood is great at creating the illusion of danger in movies. How many movies have a star hanging from a dangerous height such as a building, cliff, or swaying rope bridge? You know that the director won't risk a multi-million-dollar star, so they compromise and use trick angles, fake backgrounds, etc. If you could create a convincing CGI replica of that star, you could avoid compromise. You could even do things to characters that the best make-up artists would never dream of, and do it without the audience being able to say "cool effects."

The next step in CGI is producing more complex real-world images.

It may be an ego boost for artists to hear those words, but it should be an even greater honor to fool the audience into thinking that what they just saw was real. Some entertainment niches are moving this way, mostly by necessity. Motion-simulator rides are a good example. In these features, spectators watch a high-definition film that is synced to motion hardware in the seats. This lends an incredible feeling of realism. The obvious goal is total realism, but the demands of the audience are for fantastic events. Pioneers in this field are merging live-action footage with CGI seamlessly, and in ways that leave audiences thinking about the subject of the film, not the special effects.

The push is coming from digital artists who know what can be done—few directors and producers think of CGI as anything but special effects. In a few years, the CGI field is really set to explode as the current demand for spaceships, aliens, and monsters is dwarfed by the huge potential for invisible CGI. PCGV

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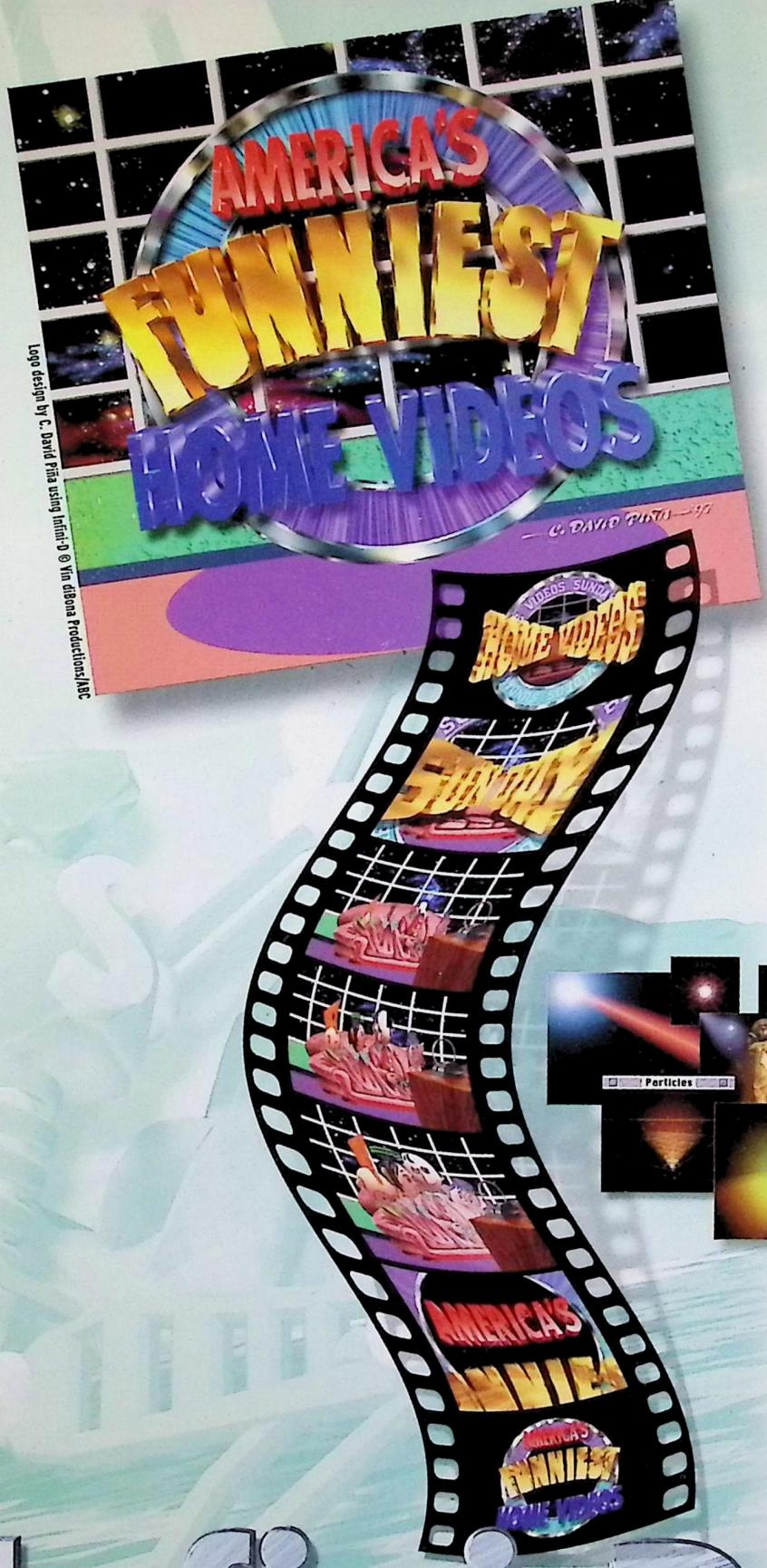

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